

TECHNOLOGY

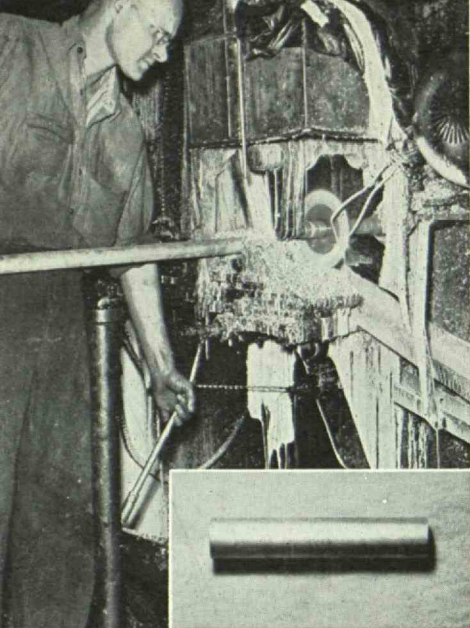
REVIEW *November* 1949



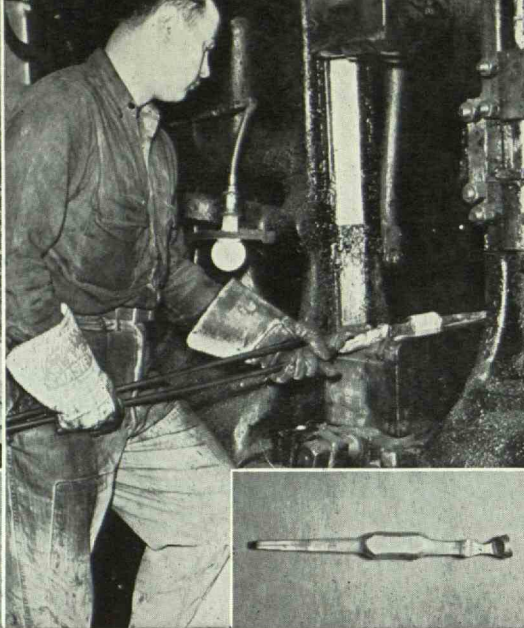
technology review

Published by MIT

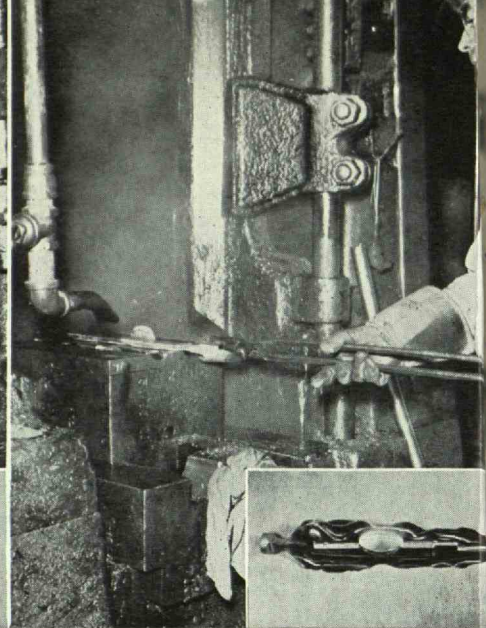
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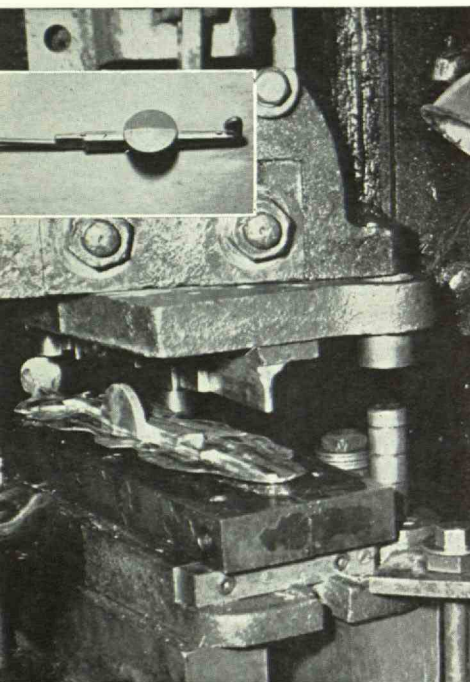
Cutting Bar



Lengthening and Shaping



Shaping to the Die



Trimming the Flash

FORGING ALUMINUM

into
Pressure Cooker Tops



Finishing and Polishing

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HAROLD B. HARVEY '05

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74th Street and Ashland Avenue

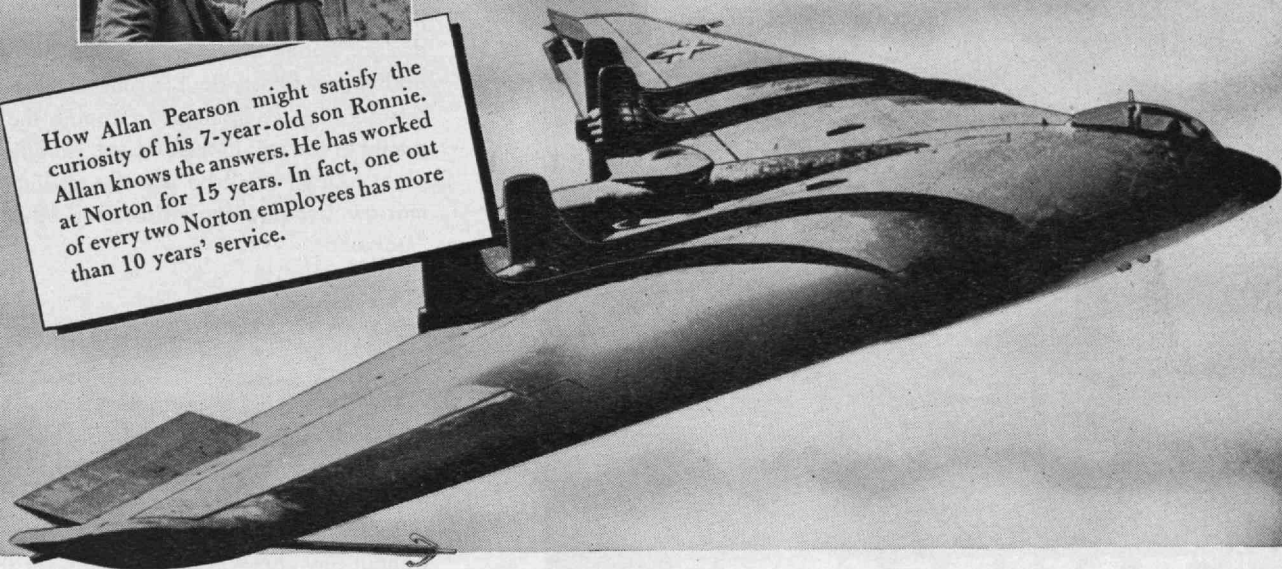
Chicago 36, Illinois

FORGINGS IN ALUMINUM — BRASS — BRONZE — COPPER — MAGNESIUM — MONEL — ALLOYS

MACHINING FACILITIES



How Allan Pearson might satisfy the curiosity of his 7-year-old son Ronnie. Allan knows the answers. He has worked at Norton for 15 years. In fact, one out of every two Norton employees has more than 10 years' service.



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"It's power that does it, son. Power from its new jet engines. Engines built with parts made from today's strongest, toughest metals . . . parts that fit within one ten-thousandth of an inch."



"Those tough parts are shaped by tougher tools. Tools sharpened by Norton grinding wheels made from our 32 Alundum abrasive, the fastest, coolest cutting abrasive ever made . . . and our famous Diamond Wheels, a Norton first in 1930.



"Then those engine parts are shaped smooth and true by Norton grinding wheels. And those parts fit each other just right. That's because of the sure finishing touch of Norton grinding wheels and machines.



"And when that giant lands, it lands safely because Norton engineering created a special grinding machine that helps make the landing gears' odd-shaped parts fit true and tight and strong."



"Yes, Ronnie, Norton helps make airplanes better. Other products, too. In fact, there's hardly anything man makes that doesn't get a lift from Norton somewhere along the line. That's why I'm proud of my job of making better products to make other products better."

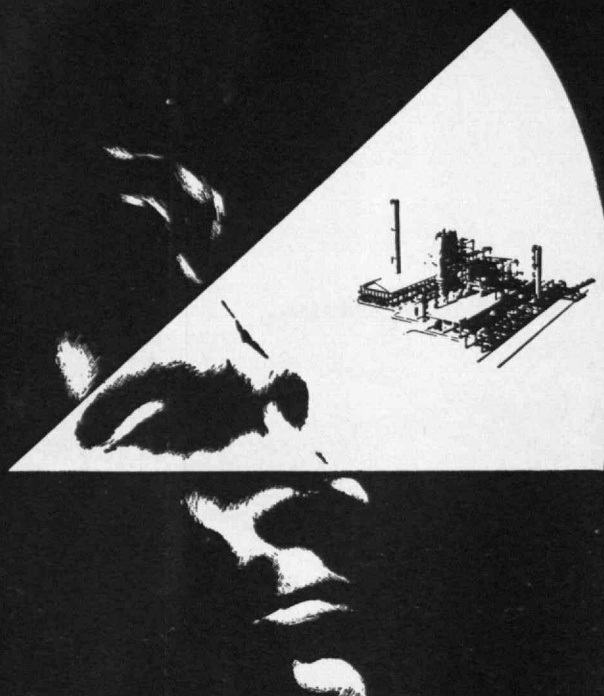
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Making better products to make other products better



NORTON COMPANY, WORCESTER 6, MASSACHUSETTS



perspective

Perspective in plant design and engineering calls for matching progressive engineering with economic foresight. We cannot predict the future, but we can recognize that the economic balance for a plant or process never stays put. We in Lummus do our best to look at your plans from past, present and future points of view. Our perspective has paid off in plants of exceptional operating flexibility—able to make a profit in spite of wide swings in demand.

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perspective

In planning this French refinery, both its initial operating level and its ultimate, expanded capacity were guiding factors for design. Room was provided for the easy addition of filters, double pipe chillers and refrigeration equipment, to double the capacity of the unit in this respect. An efficient plant today, it will be equally efficient tomorrow, because expansion need never be "makeshift."

perspective

Lummus catalytic cracking plants, war-built for 100-octane gasoline, are being operated to produce motor gasoline of lower octane rating on a consistent low-cost basis. Their suitability for this latter service was attained without any compromise in design for their original purpose. Rather, the Lummus-engineered design had the flexibility to meet requirements for the efficient production of either fuel.

perspective

The interest of Lummus in any of its installations does not end with construction and initial operation for customer acceptance. Periodic visits by Lummus field representatives are continued to review performance. In a recent case where a radical change in product requirements arose, these operating checkups furnished valuable aid in arriving at a prompt and practical plant modification to meet the new demands.

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designs and builds with **PERSPECTIVE**

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fulfillment
resourcefulness
technique

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1 to 20 hp
frame 203 to 326 a-c motors



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The Broadest Exchange Plan!

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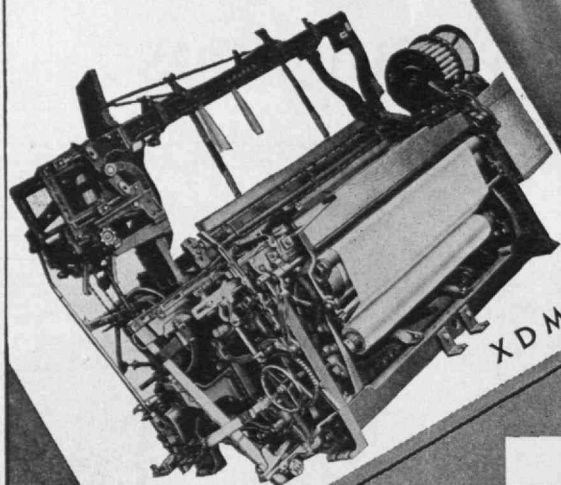
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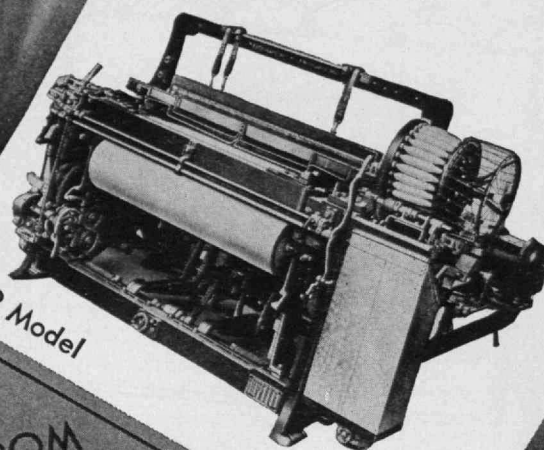
J-21533

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Motors



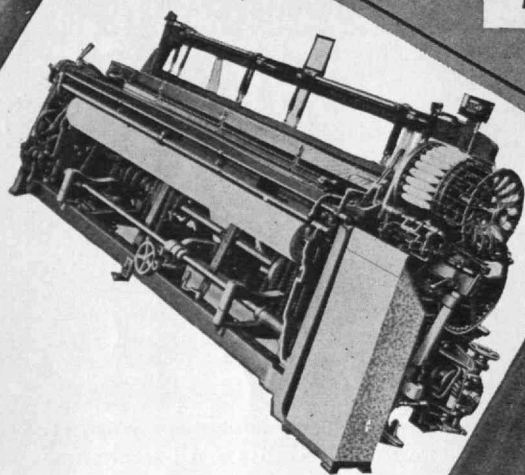


X D Model

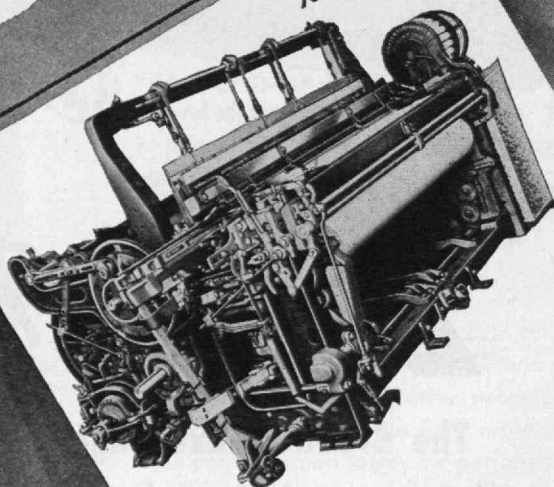


X 2 Model

X L Model



X P Model



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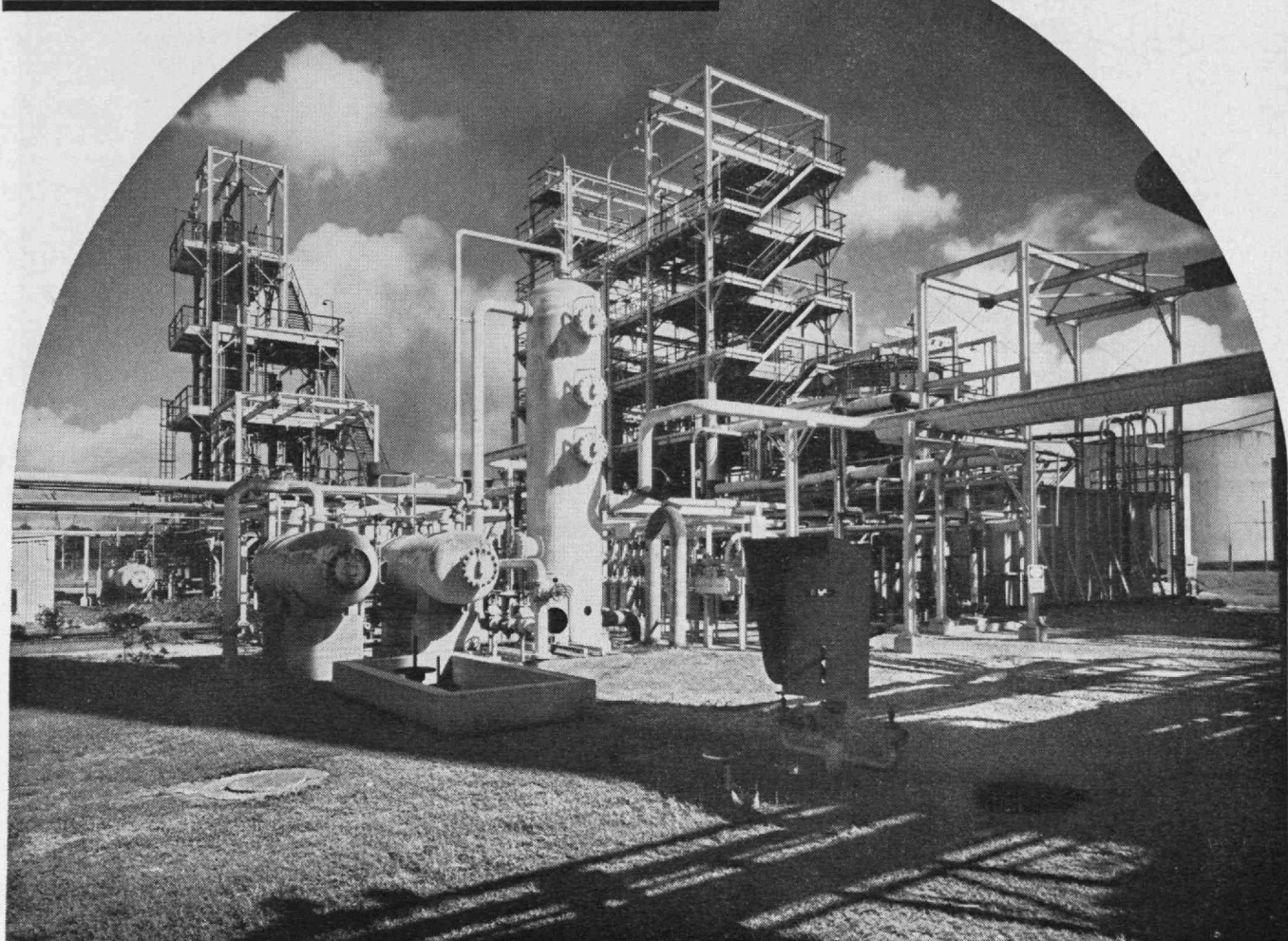
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SOLD ON

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Genuine mahogany table model with 10" screen and 2 six-inch oval speakers.
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● **Model TV-7W**
Unbeatable TV dollar value. 7" screen with twin speakers. NC enlarging lens available, \$16.95.
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● **Model TV-7M**
Metal cabinet version of TV-7W. Ideal as "second set" for playroom, den or bedroom.
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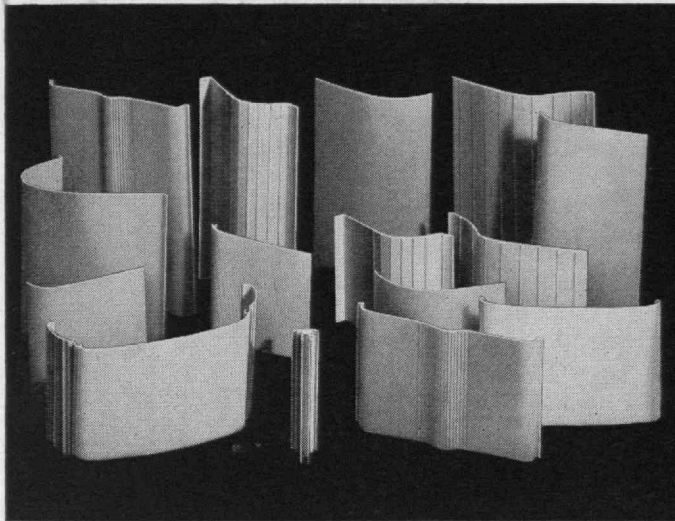
Model TV-1225
A 12½" picture tube and a 10" speaker in a handsome mahogany console.
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(1) Latest flyback high voltage supply gives clear, bright pictures even in fringe areas. (2) Automatic frequency control locks picture in place. (3) Exceptionally wide video band-width for beautiful clarity of detail. (4) Front-of-panel focus control. (5) Coil switching assures equivalent of separate, high-Q tuned circuits for each channel. (6) Automatic gain control. (7) 3-stage 37 mc IF minimizes picture interference caused by other radio services. (8) Double-tuned RF bandpass circuits improve selectivity and image ratio. (9) Automatic Station Selector and fine tuning control.

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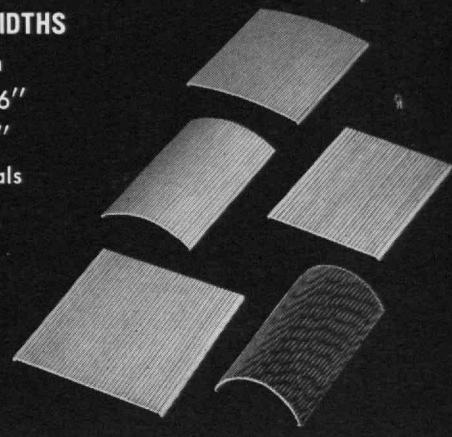


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in ¼"
intervals



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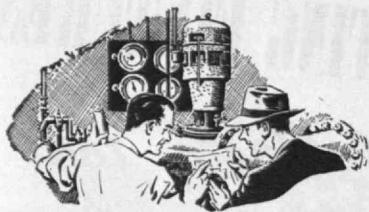
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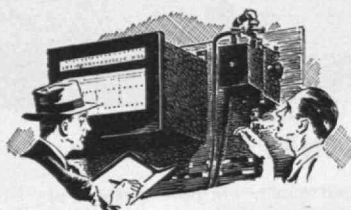
EXTRUDED POLYSTYRENE SIDE SHIELDS BY SANDEE



THE MAIN JOB of one entire laboratory at General Electric is to keep guesswork out of G-E products.



ITS STAFF specializes in giving help on tough measurement problems.



TYPICAL SOLUTION was development of first "turbidimeter," advancing work on water-purification equipment.



1000 Specialists tell us "When you can measure..."

Lord Kelvin, writing in 1883, summed up once and for all the importance of measurement.

"When you can measure what you are speaking about," he said, "and express it in numbers, you know something about it, but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind."

The need for detailed and accurate "numbers" is as great today as it ever was. Recently, for example, General Electric engineers working on water-purification equipment were hindered by the lack of any accurate way to measure water's turbidity. Another group needed data on the vibrations in their equipment.

But at General Electric any group up against tough measurement problems does not have to be stymied for long. It can "appeal" its case, can seek the aid of men

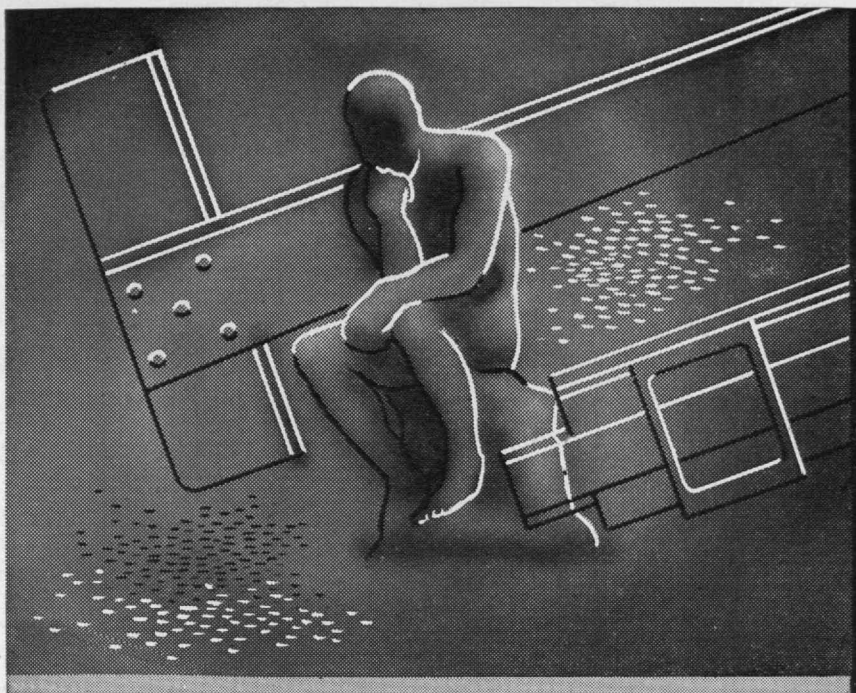
who make a specialty of measurement and allied problems—the more than 1000 staff members of the G-E General Engineering and Consulting Laboratory. GE & C serves the entire company, and is also frequently called on by other industries and government agencies.

It solved the two problems above by developing the first "turbidimeter" and a "recording vibrometer" now finding applications throughout industry—two out of thousands of similar problems handled by the laboratory each year.

The work of GE & C illustrates again how General Electric backs up research and creative thinking, implements new projects with the best available facilities, and so remains in the forefront of scientific and engineering development.

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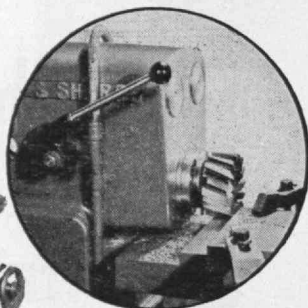
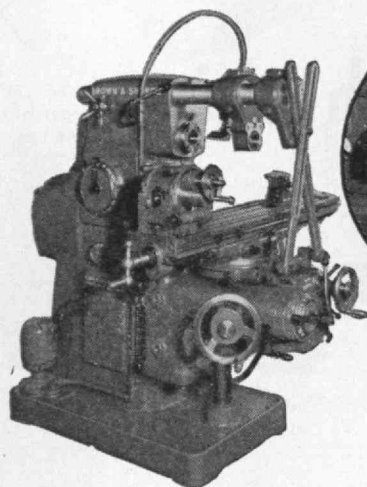
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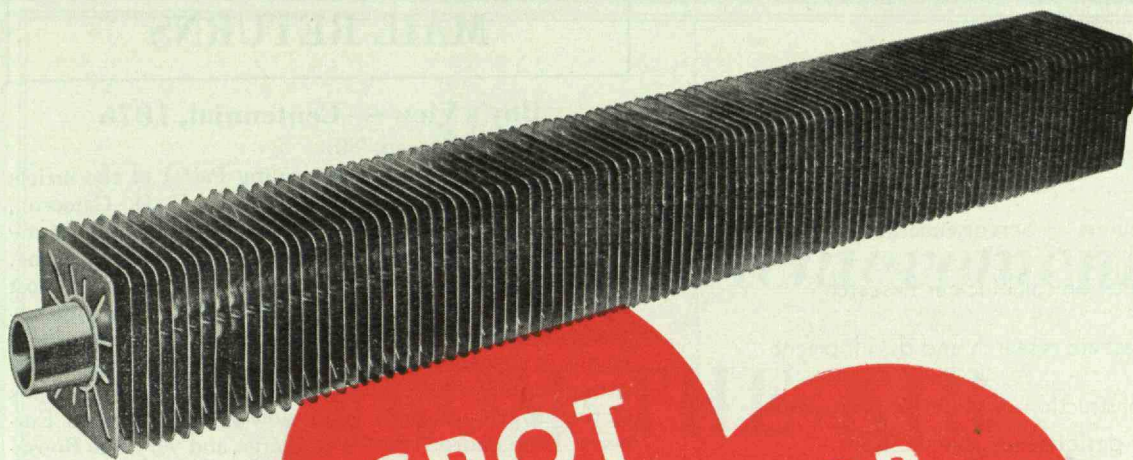
Address all correspondence to 774 Belleville Ave., New Bedford, Mass.

THE TABULAR VIEW

Man of Science. — Few biographies are more in keeping with the American tradition of the rise to renown from humble beginnings than that of Michael Faraday. His *Experimental Researches in Electricity* mark Faraday as an expositor, par excellence, of scientific prose and as a giant among scientific experimenters of the Nineteenth Century. The rigorous self-discipline to which Faraday submitted, in equipping himself for his life's work, is ably recorded in "Preparation for Discovery" (page 23) by SAMUEL E. MCCRARY. Upon graduation from the Virginia Military Institute in 1930, Mr. McCrary became a student engineer with the General Electric Company, then served four years as first lieutenant in the Cavalry, and another five as installation supervisor with General Electric. He joined the Bureau of Ships, Navy Department, in 1940, and is now research co-ordinator in the Program Planning Branch. In addition, he is secretary of the Senior Engineers' Association of the Bureau of Ships and a member of the City Council and Recreation Commission of Falls Church, Va.

Intellectual Pursuit. — For many years after the Institute established courses for advanced study in 1872, the number of graduate students formed a small fraction of the total enrollment. Since the 'Twenties, however, the Institute has graduated an increasing number of advanced students and, at the present time, about one fifth of the entire student body is enrolled in the Graduate School. The present status of the Graduate School, and its progress during the past decade, are chronicled (page 26) by JOHN W. M. BUNKER, Dean of the Graduate School since the retirement, in 1940, of the late Harry M. Goodwin, '90. Dean Bunker is a graduate of Brown University which awarded him bachelor's, master's, and doctor's degrees in 1909, 1911, and 1912, respectively, and an honorary degree last June. After organizing a new laboratory in sanitary engineering at Harvard University, serving as consultant in biology and bacteriology, and directing the biological division of the Digestive Ferments Company in Detroit, Dean Bunker joined the Department of Biology at M.I.T. in 1921.

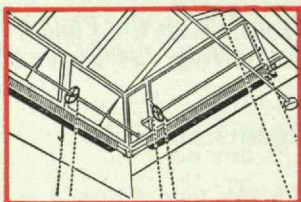
Family Living. — In the firm belief that the attainment of success, in the usually accepted sense of the term, and the accumulation of money are hardly the ultimate aims in a noble life, anthropologist M. F. ASHLEY MONTAGU urges (page 30) a re-examination and revaluation of the modern way of living. To a major extent, Dr. Montagu limits his observations to the behavior pattern of what is regarded as typical American family life, but his conclusions apply to all human relations. Through his frequent contributions to these pages, Dr. Montagu has been best known to Review readers as associate professor of anatomy at the Hahnemann Medical College and Hospital of Philadelphia. Recently, however, Rutgers University has honored Dr. Montagu by calling him to the chairmanship of its Department of Anthropology.



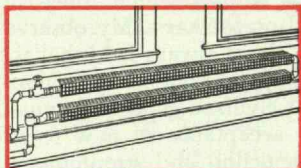
**SPOT
HEAT**

**OR
SPREAD
IT**

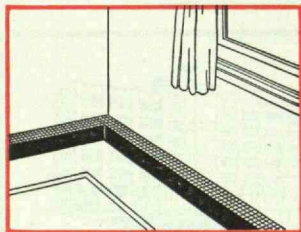
**TYPICAL APPLICATIONS
OF WEBSTER TYPE
WI RADIATION**



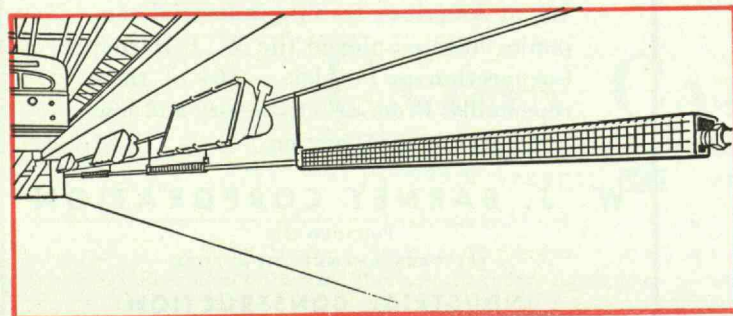
Around skylight



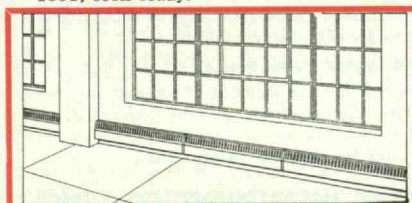
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Use this *new* Webster Type "WI" Heating Surface to "spot" heat where you want it . . . or to spread it evenly throughout your building. Around walls of shops, below work benches, in overhead skylights (instead of pipe coils). Or to do your whole heating job. A 4-foot piece of 4-inch Type "WI" gives you 25 sq. ft. of radiation and weighs only 14 lbs.

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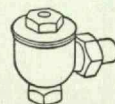
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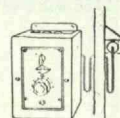
CONTROLS



Outdoor
Thermostat



Control Valve

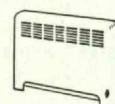


"Moderator"
Control

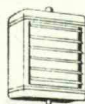
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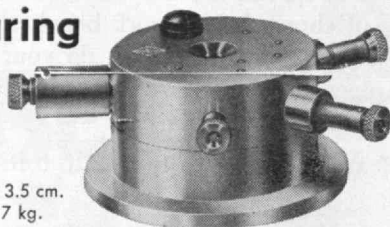
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"Cable Address MARHUB-Boston

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8.3 x 6.5 x 3.5 cm.
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PRECISION IONIZATION METER (Failla Design)

A complete instrument for null methods of radioactivity measurement where background radiation effects must be eliminated.

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Pioneer Manufacturers of Precision Instruments

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MAIL RETURNS

Boy's View — Centennial, 1876

FROM HENRY HOWARD, '89:

I was much interested in reading Part I of the article entitled "The Centennial of 1876" by E. H. Cameron, '13, in the June, 1949, issue of *The Review*. I thought my personal recollections of this exposition might be amusing.

I was taken to see it by my father when I was almost eight years old. I remember perfectly the big Corliss engine, also that there was a fascinating little model of this engine in a glass case alongside the big engine. I remember sitting on my father's shoulder so as to look over the heads of the crowd and get a good view of the Brazilian Emperor, Dom Pedro. There was a large and very fine Roosevelt Pipe Organ which furnished music when it was wanted.

I remember very pleasantly the "rolling chairs," at \$0.60 an hour, in which my father took me without extra charge, also a captive balloon in which you could make an ascension for a moderate price, and one day in the midst of a thunder squall it broke adrift when it was full of people. This soon became known and caused a great deal of excitement, but the balloon landed safely a few miles away.

I enjoyed every minute of this Centennial and it made a great impression on me.

Newport, R.I.

[Part II of Mr. Cameron's article on the Philadelphia Centennial appeared in the July, 1949, issue of *The Review*. — Ed.]

Therapeutical Agents Abroad

FROM RUDOLF E. GRUBER, '16:

Early this year I made a 14-weeks' tour of Europe, my second postwar visit to that troubled Continent, and I was deeply impressed by the great impact which American help and co-operation has had on recovery. My observations confirm a thought which I have always held that the advance of therapeutics through international co-operation presents perhaps the most civilized aspect of human behavior. The universality of acceptance of new useful therapeutic agents, such as penicillin and streptomycin, and others confirms this point of view.

New York 13, N.Y.

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Alfred T. Glassett, '20, Vice President

New Fields of Research and Achievement ... FROM THE AIR

★ ★ ★

Rare Gases Now Available in Quantity Offer Challenging Subject for Study

Among the least known of the elements have been the rare gases—Krypton and Xenon. Occurring in the atmosphere in concentration of one part per million for Krypton, and one part per twelve million for Xenon, their very scarcity gave them the status of “scientific curiosities” for a long time.

But now, these gases are available in quantity in refined, compressed form. As these gases assume the different role of “new” materials, their individual physical and electrical properties are finding interesting uses.

The increased efficiency of hot cathode (fluorescent) lights is a direct result of using Krypton as the gas filler. The brightest light ever made by man is produced by an electrical discharge through a column of Krypton... these lights are used to penetrate fog at airports.

Xenon is replacing mercury vapor in industrial (thyatron) tubes, to avoid low temperature condensation troubles. It is Xenon that makes practical the “repeater” (gas discharge) photographic flash lamp—the low resistance and good spectral range of the gas both being important. In the fast-growing field of atomic energy, the rare gases become increasingly important. The use of such gases in Geiger Mueller counter tubes is well familiar.

Chemists and physicists on many types of projects will want to study the possible value of these gases in their fields. Others may desire to work with the rare gases as such, contributing to further information in this expanding subject. Graduate students especially may find rare gases a fascinating, challenging, and wide open field for doctoral thesis.

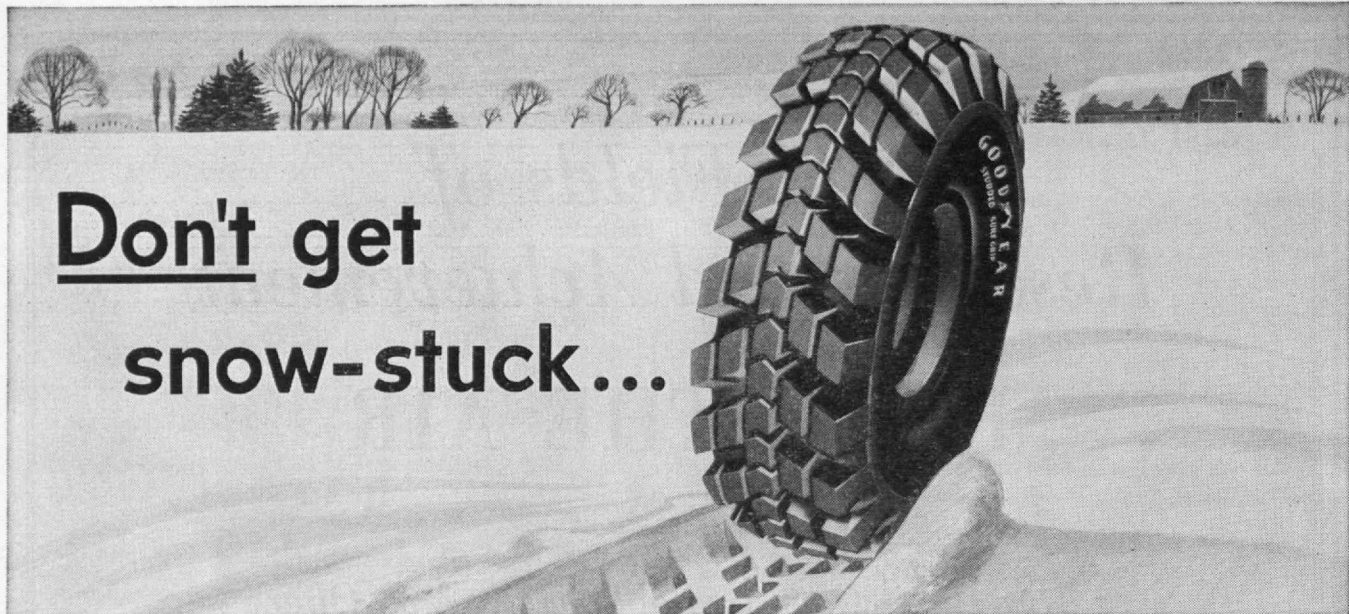
In whatever connection, scientists who may want more information on Krypton, Xenon, Argon, etc., are invited to write us fully. Please write Dept. LAP, Room 1502, 30 East 42nd St., New York 17, N. Y.

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Paul Rittenhouse

THE TECHNOLOGY REVIEW

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EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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J. Stofan

Ribbons over Roof Tops

THE TECHNOLOGY REVIEW



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November, 1949

The Trend of Affairs

Graphic Arts Research

RARELY does one find an important industrial operation in which technical progress remains at the same level for more than half a century. Yet this situation does exist in the field of type composition. The last major change in typesetting — the transition from hand set to machine composition — occurred more than half a century ago; for both Linotype and Monotype machines were invented and in use before 1900.

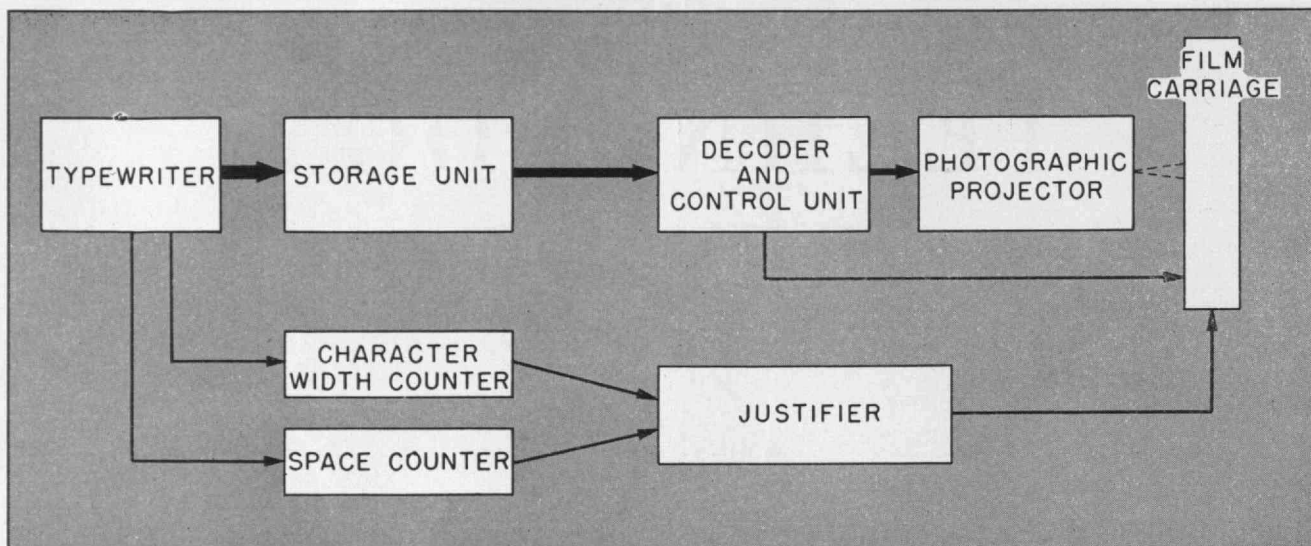
Some have said that movable type is man's greatest invention, but this does not deny the fact that an exceedingly cumbersome arrangement is used for putting ink on paper in the desired pattern. The possibility of newer and more promising ways of setting type and making ink impressions has been opened up by research in the field of the graphic arts. It is small wonder, therefore, that leaders in this field feel that present methods of printing will soon be obsolete and that, under increasing economic pressure, far-reaching changes must be made as quickly as possible. Such changes are expected to come about in two parts — in typesetting and in making impressions — and already significant progress has been made in a revolutionary method of type composition.

Of the many attempts which have been made to improve methods of composition, the most promising have been based on the idea of composing the printed page on photographic film instead of in the form of metallic type. The great promise of photographic composition lies in its flexibility and economy. Freed from the necessity of cutting and shaping metal, characters can be projected onto film in a bewildering variety of styles, sizes, and groupings. At the same time, costs are sharply reduced not only by the increased speed of composition, but also by the elimination of tons of heavy type metal inventory.

A new photocomposing machine which has recently been operated in public demonstrations makes use of a number of modern technical developments in achieving its success. An electric typewriter not only records the material being composed but also provides enough energy to operate auxiliary equipment attached to it. Relays and switches which were developed to meet the needs of automatic telephone systems are used in the new machine to provide reliable control and to carry out at high speeds the computations required in justifying lines. Photoelectrically actuated electronic equipment controls the high-intensity flash lamp which places each character on the film with the precision required in modern printing.

A block diagram (page 18) is useful in understanding the photocomposition process. The material to be composed is typed on an ordinary typewriter keyboard and the operator can see immediately whether any corrections are necessary. Associated with each character is a binary number code which identifies that character uniquely. When a key of the typewriter is pressed, the code corresponding to the character on that key is stored in a special register associated with the typewriter. When the end of the line is reached, all of the characters and spaces contained in that line are held in coded form in the storage unit. This makes it possible to complete the justifying operation and compose the line without retyping it.

As soon as the operator completes a line and finds it satisfactory, it is released for composition. The operator can then begin to type the next line. At the same time, a reading carriage begins to move along the storage unit, and it transmits to a decoder and control unit the identification of the characters which are in storage. The decoder identifies the character called for and controls the photographic projector so that the correct character is selected and projected on the photographic film. It also determines the width of the



Block diagram illustrating the functional elements in a new method of photographic type composition. Main features of an experimental machine recently publicly demonstrated include: (1) use of ordinary standard typewriter keyboard; (2) dial and push button controls to change font, type size, typeset, and justification; (3) copy immediately visible to operator for proof-reading; (4) corrections made by use of keyboard controls in a manner similar to ordinary typewriting; (5) large range of justification of lines under fully automatic control. At present photocomposition can be performed at a rate of six characters per second, although this speed can be increased. The end product can be either a positive or a negative transparency ready for use in any photomechanical process.

character and, after it is projected on the film, moves the film carriage an amount corresponding to the width of the character exposed.

Information concerning the width of each character is contained within the same code that identifies the character itself. By using several of the digits of the binary code which identifies the character, it is possible to make a double-purpose code which both identifies the character and tells its width. These width digits are sensed separately by the decoder and control unit in order to move the film carriage an appropriate distance after each character is exposed.

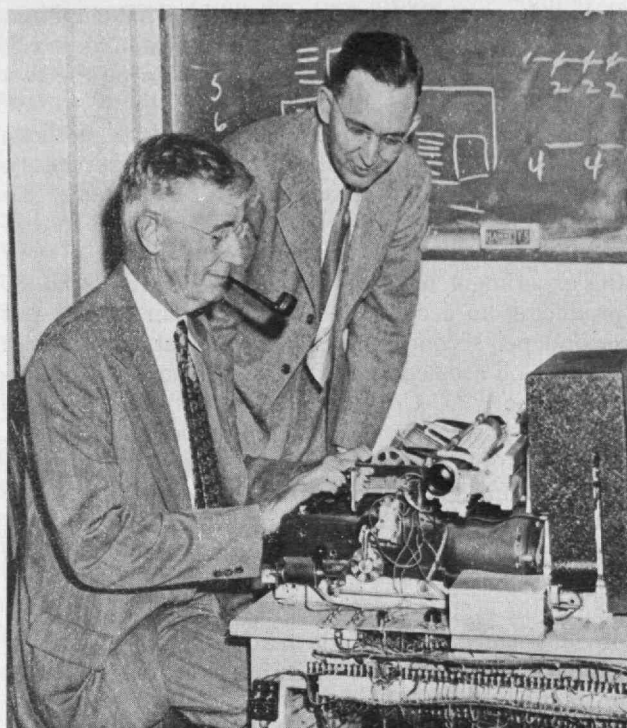
At the time the character is originally selected on the typewriter keyboard, the width digits are sensed by a separate set of contacts and transmitted to the character width counter. This device simply adds up all of the separate widths of the characters typed, together with the nominal widths of the spaces between words. An electrical circuit determines the difference between the available space in a line and the accumulated width of characters typed, and presents this difference on a meter to the operator, so that typing will stop before the line is full. A separate counter, called the space counter, adds up the number of spaces between words. If the amount of space left over at the end of the line is divided by the number of spaces between words, and this quotient is added to each of the interword spaces, the line length will equal its predetermined value and it is said to be justified. This operation is performed by the justifier unit shown in the block diagram. It will be noted that this unit controls the spacing of the film carriage. Each time there is a space between words, the film carriage is moved ahead an amount equal to the nominal width of a space, plus the additional width put in by the justifier to make all the lines come out at equal length. In actual operation, the justifying increment added to the interword spaces is not always exactly alike for each

interword, but the amount of variation is too small to be observed.

All of the characters and symbols needed for composition are carried as either positive or negative photographic images on a drum or disc which rotates at high speed. By using intense light flashes of short duration, it is possible to select any character and project it on the film with sharp definition. Type style can be changed by selecting a different band on the drum or by using a different disc. The size of type may be varied over a wide range by changing the optical magnification of the system. At present, the speed of the rotating matrix permits composition of six characters per second, and this can be increased to 10 characters per second quite readily.

One important feature of the machine is the flexibility of control which the operator has available at the keyboard. Size and style of type are chosen by selector switches, while another selector enables the operator to determine the length to which each line is to be justified. Errors are detected by reading the typed material. If serious errors occur, the operator can "kill" the entire line and retype it. To correct a faulty character, it is merely necessary to position the typewriter platen at the location of the error, press a correction button, and strike the correct character over the incorrect one.

This machine was invented by two French engineers, René A. Higonnet and Louis M. Moyroud. A number of M.I.T. men have been concerned with the development since it was first brought to this country. William W. Garth, Jr., '36, as President of the Lithomat Corporation, was instrumental in providing support for the development of the invention to the present demonstration model. During that period, Professor Samuel H. Caldwell, '25, of the Department of Electrical Engineering at M.I.T., acted as a consultant for the Lithomat Corporation. Professor Harold E.



Boston Herald

Edgerton, '27, also of the Electrical Engineering Department, has been assisting in the design of the stroboscopic light system used.

The intense interest aroused by this development among leaders in the printing and publishing business has led to the organization of the Graphic Arts Research Foundation, Inc. The Lithomat Corporation has turned over to the new Foundation, which is organized on a nonprofit basis, all of its patent rights in the new development. Support for the further development of the photocomposing machine to commercial form is derived from the contributions of about 140 firms in the newspaper, book publishing, manufacturing, lithographing, and commercial printing business.

An outstanding supporter of the new Foundation is Vannevar Bush, '16, President, Carnegie Institution of Washington, who is one of the life members of the Foundation. Dr. Bush is turning over to the Foundation his patents and other work in the field of graphic arts where, by his contributions, he once again demonstrates his striking versatility. In addition to Dr. Bush, Mr. Garth and Professor Caldwell are also members and directors of the Foundation.

Pincus No. II

THOSE who follow Al Capp's comic strip need not be reminded of L'il Abner's harrowing experiences with a denizen of the planet Pincus No. II. The immaculate condition in which our interplanetary traveler, B-69-O, arrived on earth illustrates one of the outstanding advantages of the artist over the engineer. Mr. Capp portrayed B-69-O in neatly pressed attire such as Superman might expect to find displayed in the pages of *Esquire*, and dropped the matter there. But in the *Journal of Applied Physics* for October, 1948, George Grimminger, '38, indicates that a real space traveler, or at least his ship, may be subject to

This is to show the extent of the justification range
This is to show the extent of the justification range

This is to show how the length of lines can be varied at will.
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The cylinder is placed at one end of the bed-plate, and the crank-shaft at the other end, and through the piston rod a connecting rod, and the crank on the shaft, the rectilinear reciprocating motion of the piston is converted into a continuous rotary motion. In order to compel the end of the piston-rod attached to the connecting rod at the cross-head to move along a straight line, the slide-blocks fixed on both sides of the cross-head are made to slide between guides cast in one piece with the bed plate.

Above: A few examples of photocomposition produced on the experimental machine and selected to show some of the possibilities of the new process. The type face does not represent the work of professional type designers.

Left: Dr. Bush and Professor Caldwell operate the electric typewriter during public demonstration of an experimental model of photocomposing equipment.

considerable wear and tear. Space, it seems, is not nearly the frictionless void it has been pictured.

Assembling the known data on the prevalence of meteorites in the earth's vicinity, and the equally sketchy information on the penetrability of metals by extremely high-speed masses, Mr. Grimminger calculates the probability of an encounter between a space ship and a meteorite, and even estimates the thickness of metal plate required to prevent perforation by the impact of meteorites of different sizes. The number of meteorites large enough to survive their blazing dash through the atmosphere is so small that a collision between such a body and a ship still in the vicinity of the earth may be discounted. Only five or six meteors reach the earth's surface every 24 hours, it is believed. As the meteorites get smaller, however, with weights that are measured in grains rather than in pounds, their numbers increase greatly. Stone and iron particles of dust size, perhaps 0.002 inch in diameter or larger, strike the earth's atmosphere by the hundreds of billions per day. Nor can meteorites of these tiny sizes be dismissed as harmless, for upon entering the earth's outer atmosphere their velocities may reach 250,000 feet per second.

Against a thin aluminum skin cosmic particles of even such small size could be damaging, particularly if they were composed mainly of iron and nickel, as about one-tenth of all meteorites appear to be. A heavier stainless steel skin might be immune to meteorites up to 0.02 inch in diameter, of which size the earth may sweep up hundreds of millions per day. Although these numbers are enormous, the volume through which they are scattered is so immense that preliminary calculations indicate no major danger of a damaging collision between any reasonably sized space ship and a meteorite.

A ship, if that is the word, having an exposed area of 1,000 square feet and a stainless steel skin nearly one-sixteenth inch thick could expect to remain in re-

gions near the earth for more than 100 hours before the chances of being holed reached one in 1,000. If the skipper were willing to accept a 50-50 chance of escaping damage, he could remain aloft for a period of about 10 years.

During such intervals, however, the ship would be hit many times by particles too small to penetrate but with sufficient momentum to dent and abrade the hull. One would expect, therefore, that our space passengers would encounter not the ultimate quiet of a clean-swept void but rather a series of rustlings and clangs as they brushed through the debris of the cosmos.

The Trend in Rockets Is Up

EVER since the first ex-German V-2 took off from the White Sands Proving Ground in New Mexico, rocket experts looking at the one-ton war head carried by these rockets have talked about the results which could be achieved if that one-ton war head were replaced by a one-ton rocket. After a preparation of one year this experiment was made on February 24, 1949, when a V-2 rocket took off at White Sands, carrying an American-made WAC Corporal as an "upper step." The WAC Corporal, taking over after the V-2's fuel supply was exhausted, reached a maximum velocity of one and thirty-nine hundredths miles per second, and a peak altitude of 250 miles. This more than doubled the previous altitude record for rockets which was made by a V-2 traveling alone to 116 miles on December 17, 1946.

In the two-stage experiment, the body of the V-2 crashed about 20 miles to the north of the firing platform, while the WAC Corporal was tracked by radar to an impact point between 80 and 90 miles north of the firing platform. So far, however, the actual impact point has not been found and people who know this area best are very doubtful that it ever will be found, except perhaps by accident.

While step rockets have been built earlier, all step rockets so far have been powered by solid fuel. This is the first experiment of this kind involving liquid fuels. The WAC Corporal, the result of collaboration between the California Institute of Technology and the Douglas Aircraft Company, made its debut also at White Sands, by coincidence on the same date, February 24, 1946. The first firing of the WAC Corporal was undertaken with a solid fuel booster which raised the take-off weight of the whole to 1,000 pounds. The rocket reached an altitude of 230,000 feet.

Although the two rockets, which operated as lower and upper steps of the same aggregate, are both liquid-fuel rockets they differ in very many particulars, even if the vast difference in size be disregarded. The 46-foot tall V-2 has a streamlined hull, the WAC Corporal is cylindrical, with a conical nose. It stands 16 feet high and the cylindrical body measures one foot in diameter. In the V-2 rocket the fuels are forced into the rocket motor by centrifugal pumps. In the smaller WAC Corporal such a device is not needed as fuel feed is accomplished by means of gas pressure. In the V-2 the fuel is 150-proof grain alcohol with liquid oxygen. In the WAC Corporal the fuel is aniline, and

the oxidizer is red fuming nitric acid. This combination has the advantage that ignition is instantaneously automatic; all that has to be done is to bring the two liquids together.

The take-off weight of the WAC Corporal, without booster (as it was probably used in this experiment), is 665 pounds: the fuel load weighs 385 pounds. The thrust of the motor at sea level is 1,500 pounds so that the thrust of the WAC Corporal, when it took over in this experiment, must have been close to 1,700 pounds, producing an acceleration of more than 48 feet per second per second, which is somewhat higher than the take-off acceleration of a V-2. Maximum acceleration of the WAC Corporal must have been about five times the acceleration due to gravitational attraction. Its fuel supply lasts for 38 seconds of burning.

The main significance of this experiment is that the somewhat ticklish problem of igniting the upper step, and of lifting it out of the lower step, has been solved successfully. That the solution of this problem would lead to the establishment of a new altitude record was obvious, since the altitude reached by a rocket depends on its maximum velocity and since the velocities of the two steps add up.

All in all, it can be said that liquid-fuel rockets live up beautifully to the theory which was evolved over 20 years ago. The trend in rockets is still up, and the day when the upper step of such a combination will fail to return, because it has been established in space in an orbit around the earth, is coming steadily closer.

Stripes of Color

CHROMATOGRAPHY, a method of chemical analysis that was discovered in 1906 but then lay fallow until the 1930's, has recently burgeoned into widespread use for separating and purifying chemicals from mixtures inseparable by other means. Chromatography is that rarity among scientific advances, the product of a flash of genius on the part of a single inventor. Michael Tswett, who discovered this procedure early in the current century, called his method "chromatography" because he used it to separate colored materials found in plants. The name adheres despite the fact that the method now is used as much or more for the resolution of colorless mixtures.

Although chromatography is a method of chemical analysis, it depends, paradoxically, upon a physical principle — adsorption. Adsorption is surface adhesion, in extremely thin layers, between gases, solutes or liquids, and solid particles. The classic procedure established by Tswett, and still used in certain applications, serves nicely to demonstrate how differential adsorption acts to resolve mixtures. Tswett packed a vertical open-ended glass tube with powdered chalk, and then allowed a mixed solution to percolate downward through this column. He found that certain substances were trapped in the column by adsorption on the chalk, thus being removed from solution and allowing pure solvent to escape at the bottom of the tube. He also discovered that different substances were caught at different levels of the tube; the more strongly adsorbed compounds were held near the top of the column, whereas those less strongly adsorbed

were held further down. By "developing" the column through flowing pure solvent through the chalk, he found that each member of the mixture could be consolidated into a sharply defined, separate band or stripe.

Once a chromatogram has been established and developed, the several substances adsorbed on the column may be obtained individually and in pure form by one of the various procedures. A direct approach is to extrude the contents of the packed column in one piece, separate the various bands by cutting them apart with a knife, and then free each compound separately from the section of the adsorbent holding it by dissolving in a suitable solvent. But components of a chromatogram may also be obtained separately without disturbing the column. One procedure is to flush the chromatogram continuously with the solvent used to establish it; thereupon the separate bands migrate downward, and pass out of the bottom of the tube one at a time. Or by changing to a different solvent, it is sometimes possible to wash one band out of the column without releasing the others.

In Tswett's original experiments, the bands of the chromatogram were readily localized visually because of their colors. When colorless substances are separated by chromatography, the limits of each zone are gauged by odor, by chemical tests, by biological tests in the instance of materials like antibiotics, by use of x-ray and electron diffraction analysis, or by means of a Geiger-Müller counter if radioactive isotopes are concerned.

Other substances besides chalk used in adsorption columns include silica, alumina, carbon, various clays, cellulose, cotton, and starch. A wide variety of solvents, either in pure form or as mixtures, may be used; among these are water, phenol, petroleum ether, benzene, butyl alcohol, methanol, and ethylene dichloride. Since adsorption of a compound in chromatog-

raphy depends not only upon the compound itself, but also upon the adsorbent used as well as the solvent or mixture of solvents employed, the potential effectiveness of chromatography in separating mixtures is virtually boundless. To date, behavior of materials in chromatography has been observed mainly on an empirical basis, although relationships between such behavior and molecular structure are being studied and some have been established.

Only a single revolutionary latter-day advance in chromatography — the paper chromatogram — has been made since Tswett's basic discovery. This procedure uses a sheet of filter paper as the adsorption column. Solutions and solvents are flowed through a vertical sheet of paper either by allowing the liquid to pass upward through capillary action, or else by bending the upper margin of a sheet over the edge of a trough, into the fluid contained in the trough, and thus enlisting gravity to aid the flow. One immediate advantage of the paper chromatogram is ease of use; for proper packing of powder into a tube to make the conventional column is difficult and tedious. Furthermore, extrusion of the column in the event that it is desired to dissect it requires much skill, whereas paper chromatograms are readily cut apart with scissors. But the outstanding superiority of paper chromatography lies in the fact that it makes possible two-dimensional chromatograms. In this procedure, an unknown is placed on the upper left-hand corner of a sheet of paper, and a chromatogram is established down the left-hand margin of the sheet by a flow of one particular solvent in this direction. Next, the sheet is rotated through 90 degrees, so that the initial chromatogram now appears across the top margin of the paper. Then development is resumed with a different solvent flowing vertically, thus at right angles to the original direction of flow. In this way the chromatogram is developed still further, until the components of the origi-

The Mid-Century Convocation held at M.I.T. last spring provided opportunity for (left to right) Alfred L. Loomis, Sir Henry Tizard, and Lee A. DuBridge to examine the pulsed magnetron, a key development of World War II radar. Sir Henry, formerly president of Magdalen College, Oxford, headed the British scientific mission which brought the magnetron to America, and Dr. Loomis, chairman of the Microwave Committee of the National Defense Research Committee, figured importantly in establishing M.I.T.'s Radiation Laboratory when it undertook the practical applications of this discovery. Dr. DuBridge was director of the Laboratory during World War II, and is now president of the California Institute of Technology in Pasadena.



M.I.T. Photo

nal mixture are distributed as isolated spots over the full area of the paper (hence, two dimensional). The extraordinary sensitivity of two-dimensional paper chromatography is illustrated by the fact that it has been used to segregate 22 different amino acids, compounds so closely related that they are difficult to separate by any other means, from a sample weighing less than one two-thousandth of a gram.

In the Eighteenth Century, crystallization was the principal means available for separation of chemicals and their preparation in pure form. By the middle of the Nineteenth Century, distillation had been so perfected that it could be applied intensively in the separation of volatile compounds that do not crystallize readily. At present, chromatography has assumed the leading role in the resolution of mixtures that crystallization and distillation occupied in their day. Chromatography now is used to separate mixtures of virtually every type of substance, including inorganic compounds, fatty acids, amino acids, carbohydrates, antibiotics, enzymes, and vitamins. It has proven effective in the isolation of substances ranging from hydrogen ions with a molecular weight of unity, to the largest proteins and colloidal particles with molecular weights in the order of a million.

Palatable Prospect?

A CHEMICALLY transformed world of tomorrow, which could support a population of 15 billion living in earthenware houses and eating butter from coal, sugar from trees, and proteins from yeast, was envisioned by a Harvard University chemist at an American Chemical Society meeting in Newark, N. J., at which he received a gold medal and \$1,000 cash for helping to build a new industry out of sand. The speaker was Eugene G. Rochow, and the world he pictured would be made possible largely by the use of inexhaustible instead of exhaustible raw materials. Houses, for example, would be built of excavated earth fused into bricks and slabs on the spot. Meat and eggs would disappear from man's diet because the animals producing them consume too much food. Cellulose from trees, a highly efficient type of plant, would be converted into edible sugars; synthetic clothes as well would be made from it.

Petroleum provides a striking example of the plight in which the human race is rapidly involving itself. With an estimated 58 per cent of the original petroleum reserves of the United States gone, current efforts to avert a fuel crisis are centered in the synthesis of gasoline and oil from natural gas and coal. But these raw materials, in turn, can be exhausted, and, besides, there is competition for the coal reserve on the part of the coal industry, the chemical industry, the metallurgical industries, and the electric power industries, in addition to the petroleum industry. Some day coal may be needed for food and so denied to all other industries.

Probably man's present eating habits will have to be radically altered before many generations pass. It took nearly five acres of arable land per person to feed the United States in 1947, and on this basis, even if every bit of land in the country, except deserts,

swamps, and rocky areas, were cultivated, only some 306,000,000 people could be supported. Moreover, forest lands could not be expected to yield as much as our present farms, and soil erosion would be greatly increased by cutting down all trees.

It would be better, in Professor Rochow's view, to continue growing trees and to use them for food. Although man cannot digest cellulose from trees directly, the cellulose could be converted into digestible sugars that would supply all carbohydrate needs. Meat and eggs as sources of proteins seem certain to vanish from the human diet, for a beef steer converts only about 12 per cent of its food to meat, and does worse at it when poorly fed.

Ultimately, Professor Rochow explained, the real problem will be to assure a continuing supply of atmospheric carbon dioxide from which plants can build their tissue. Carbon dioxide is steadily being soaked up by the oceans, and it will have to be recovered from them. If this problem, and the others connected with nutrition, are solved along the lines indicated, he said, "a United States population of about one billion people and world population of 15 billions would not seem unreasonable."

Rugged Electron Tubes

FOR about 30 years after Lee DeForest invented the three-element electron tube, tubes of all kinds were regarded as fragile bits of wire and glass. The introduction of the metal-cased radio tubes about 1936 did much to change thinking regarding the fragility of these devices, but it was not until World War II that any large-scale serious efforts were made to develop designs and manufacturing techniques to make tubes as rugged as any piece of mechanical equipment subjected to rough usage, for the need for rugged tubes was emphasized by their use in proximity fuses.

The ordinary user of radio tubes has benefited from the wartime program of "ruggedization," and so has the industrial user, for rugged electron tubes are indispensable wherever electronic equipment is used under severe conditions of vibration, shock, or acceleration. Important in the development of such tubes are methods of testing for sturdiness and durability. These methods are now being studied and developed at the National Bureau of Standards, as well as in the laboratories of commercial types of tubes, as part of a comprehensive tube-ruggedization program. One phase of the project consists of a survey of the actual operating conditions for electron tubes in various kinds of commercial, industrial, and military applications. This study provides a practical basis for the design of test equipment to simulate the hazards of actual use.

In addition to working out adequate test methods, the Bureau is developing new kinds of rugged tubes. The design of these tubes is based on an analysis of the ways in which ordinary tubes fail under test or in service. A detailed knowledge of operating conditions and tube failures is thus a useful guide to the design of tubes that will be strong enough to operate properly under severe mechanical abuse. Some tubes may have

(Continued on page 50)



Keystone View Company, Inc.

Probably the foremost experimentalist of Nineteenth-Century investigators, Michael Faraday is shown in his laboratory where the foundations were laid for his Experimental Researches in Electricity.

Preparation for Discovery

Self-Education through Determination and Perseverance

Led Michael Faraday to Renown as Outstanding

Nineteenth-Century Research Worker

By SAMUEL E. McCRARY

THE name of Michael Faraday seems to be surrounded by an aura of wonder, almost reverence, whenever it is sounded among men of science. Biographies, memorials, and awards show that this has been true for more than 100 years, including quite a few years of his own lifetime. As years pass, and in our hurried search for newer things we find little opportunity to look back and critically examine the basis for his greatness, we take it for granted. Our textbooks of science tell us of his wonderful discoveries about natural things, but very little about the precepts which guided him; the methods and attitudes which he applied rigorously to uncover nature's secrets.

Sir Humphry Davy, at the height of his fame, was once asked what he regarded as his own most important discovery and he replied, "Michael Faraday." Had he then been asked what he regarded as Faraday's most important discovery, he might have answered again, "Michael Faraday," for self-discovery was perhaps the most important factor in Faraday's remarkable success.

Michael was born in London on September 22, 1791, to Margaret Hastwell, a farmer's daughter, and James Faraday, a blacksmith. There were then two older children, Robert, aged three, and Elizabeth, aged four. Eleven years later there came another sister named Margaret. From all accounts this little family lived an uneventful existence — simple, honest, religious, and hard-working. They were poor, too, for it has been recorded that the family was for a time on public relief. The children went to common day school and played marbles and other games in the streets.

Nearby at Number 2 Blandford Street was the bookshop of George Riebau who employed Michael at the age of 13 as an errand boy, on trial for a year. His first duty was delivering newspapers, and his customers, exacting in their demands, gave him cause to say in later years: "I always feel a tenderness for those boys because I once carried newspapers myself."

At the age of 14, Michael was indentured as an apprentice bookbinder to Mr. Riebau for seven years at no pay. It was here, under a kindly master, that he

began work on his preparation for discovery. He wrote as follows:

Whilst an apprentice, I loved to read the scientific books which were under my hands, and, amongst them, delighted in Marcet's "Conversations in Chemistry," and the electrical treatises in the "Encyclopaedia Britannica." I made such simple experiments in chemistry as could be defrayed in their expense by a few pence per week, and also constructed an electrical machine.

His master allowed him to hear evening lectures on natural philosophy by Mr. Tatum at his house in Fleet Street. These lectures cost a shilling each, advanced by his older brother, Robert, a blacksmith. Through Mr. Tatum he made friends with Benjamin Abbott, a confidential clerk, and a Mr. Magrath. Also, a Mr. Dance, a member of the Royal Institution, who arranged for him to hear four lectures by Sir Humphry Davy in the spring of 1812. Of these he took careful notes and used them to considerable advantage a short time later.

About the same time he began a correspondence with Benjamin Abbott in which they exchanged frequent letters to improve their ability to write. They continued this correspondence for many years, even though they saw each other frequently. Each letter usually contained a short essay, or a description of some experiment in natural science which they had conducted.

After completing his apprenticeship, he went as a journeyman bookbinder to a Mr. De la Roche, but his thirst for natural science left him with little taste for his trade. With some boldness he wrote a letter to Sir Humphry Davy telling him of his desire to "enter the service of science," and as proof of his earnestness sent bound copies of the notes he had taken of Davy's lectures. Sir Humphry was so pleased by this sincere compliment that he sent for Faraday and engaged him on March 1, 1813, as an assistant in the laboratory of the Royal Institution, at 25 shillings a week, with two rooms at the top of the house.

A few weeks afterward, Mr. Magrath introduced him as a member of the City Philosophical Society which had been founded by Mr. Tatum. Of this Faraday wrote:

It consisted of thirty or forty individuals, perhaps all in the humble or moderate rank of life. Those persons met every Wednesday evening for mutual instruction . . . and considered and discussed such questions as were brought forward by each in turn. . . . We had a "class book" in which, in rotation, we wrote essays and passed it to each other's houses.

He described still another means of self-education: During this spring Magrath and I established the mutual-improvement plan, and met at my rooms up in the attics of the Royal Institution, or at Wood Street at his warehouse. It consisted perhaps of half-a-dozen persons, chiefly from the City Philosophical Society, who met of an evening to read together, and to criticise, correct, and improve each other's pronunciation and construction of language. The discipline was very sturdy, and the remarks very plain and open, and the results most valuable.

So, by reading, listening, observing, and testing himself through writing and lecturing, he developed his powers of analysis and expression. Apparently his

preparation by these means was so thorough that Davy was highly impressed, for he asked Faraday to accompany him on an extended tour of the Continent to serve as his assistant and amanuensis.

On October 13, 1813, Sir Humphry, Faraday, and Lady Davy left England to visit the great men of science in Europe and to explore their laboratories. Davy was then one of the most renowned of scientists and his reputation was such that he was granted safe conduct through all the countries even though wars were imminent or actually in progress. This grand tour, lasting for a year and a half, provided direct contact with the fountainheads of contemporary and historical scientific knowledge. Faraday wasted none of it. He carefully kept a diary, and of course, notes on such experiments as were made by Davy and his colleagues. He met Ampère, Clément-Desormes. He and Davy examined a strange new substance, iodine, discovered by Courtois, and later shown to be an element by Gay-Lussac. He had a glimpse of Napoleon, who was then waging war on England. They talked with Arago, Gay-Lussac, Chevreul, Volta, de la Rive, and many others. Lasting friendships were made with some of them. They crossed the Alps and climbed Vesuvius twice. In Florence, Faraday saw Galileo's first telescope, and with the great lens of the Duke of Tuscany they burned a diamond at the Accademia del Cimento. He observed the peoples at work and at play, and learned something of their languages.

They returned to London in 1815. Davy went to his experiments in the laboratory of the Royal Institution with Faraday as his assistant. He watched Davy's studies of gases and flame which resulted in the invention of the safety lamp. All the while Faraday studied his master, praised his successes openly, and privately judged his faults. Gradually, Davy set Faraday to work on his own. He developed great skill in handling laboratory apparatus for experiments but he was never satisfied with an experiment until he had repeated it before an audience.

In this stern way he continually tested himself for errors in judgment as well as in expression. An insight into the seriousness with which he regarded self-examination may be gained from his remarks in a lecture on "Inertia of the Mind" in 1817, when he was 26 years of age:

Industry is the natural state of man, and perfection of his nature is dependent on it; the progression which distinguishes him from everything else in the material world is maintained by it alone. The sun rises and sets, and rises and sets again. Spring, summer, autumn, and winter succeed each other only to be succeeded by the same round. A plant rises from out of the earth, puts forth leaves and buds; it strengthens, arrives at maturity, and then dies, giving place to other individuals who traverse the same changes. An animal is born, grows up, and at last gives signs even of intelligence; but he dies without having improved his species; and it is *man alone* who leaves a memento behind him by his deeds of his having existed; who surpasses his predecessors, exalts his present generation, and supports those that follow him . . . If he be not active, not in a state of improvement, what better is he than the brutes?

With all his intensive self-examination and study he was not so much of an introvert that he could not

enjoy the society of others in simple pleasures of life. This is indicated from his diary. Typical is an entry about a walking tour in Wales, dated July 19, 1819:

Proceeding onwards into Brecknockshire, we suddenly heard the roar of water where we least expected it, and came on the edge of a deep and woody dell. Entering among the trees, we scrambled onwards after our guide, tumbling and slipping and jumping, and swinging down the steep sides of the dingle, sometimes in the path of a running torrent, sometimes in the projecting fragments of slate, and sometimes where no path or way at all was visible. The thorns opposed our passage, the boughs dashed their drops in our faces, and stones frequently slipped from beneath our feet into the chasm below . . . By the time we had reached the bottom of the dingle, our boots were completely soaked, and so slippery that no reliance could be placed on steps taken in them. We managed, however, very well, and were amply rewarded by the beauty of the falls which now came in view. Before us was a chasm enclosed by high perpendicular and water-worn rocks of slate, from the sides of which sprang a luxuriant vegetation of trees, bushes, and plants. In its bosom was a basin of water, into which fell from above a stream divided into minute drops from the resistance of its deep fall . . . We stepped across the river on a few tottering and slippery stones placed in its bed, and passing beneath the overhanging masses ran round on projecting points, until between the sheet of water and the rock over which it descended; and there we remained some time, admiring the scene . . . No path was discernible from hence, and we seemed to be inclosed on a spot from whence there was no exit, and where no cry for help could be heard because of the torrent-roar.

Faraday was never sufficient until himself for religion, and church activities played an important part in his development. He was a member of a small and rigorous sect known as Sandemanians. To him there was no conflict between science and religion and he kept them distinctly apart. Apparently he enjoyed participation in the church and for years he was an elder and lay preacher. Through his church he met Sarah Barnard, the daughter of one of the elders, with whom he fell in love, and courted without unusual

incident. The temporary effects of this courtship upon his usual serenity may be seen from a letter he wrote to her:

December 1820

My dear Sarah — It is astonishing how much the state of the body influences the powers of the mind. I have been thinking all the morning of the very delightful and interesting letter I would send you this evening, and now I am so tired, and yet have so much to do, that my thoughts are quite giddy, and run round your image without any power of themselves to stop and admire it. I want to say a thousand kind and, believe me, heartfelt things to you, but am not master of words fit for the purpose; and still, as I ponder and think on you, chlorides, trials, oil, Davy, steel, miscellanea, mercury, and fifty other professional fancies swim before and drive me further and further into the quandary of stupidity.

From your affectionate,

Michael

However, inept as he may have been in writing of his love, he was persuasive enough in other ways, and they were married in June of 1821. Even though they had no children, their marriage contributed much to his life for it enabled him to achieve serenity of mind needed to further prepare him for the great work he had yet to do.

Now he was 30 years old. He had learned all that his master, Davy, had to teach him; he had tested his power of observation, analysis, and expression. He was thoroughly competent to seek a fortune through commercial work or to pursue original research in the laboratory, but he was not yet ready. He needed to increase his knowledge of facts and to perfect his methods of judging them. So, for nearly 10 years he worked, wrote, and lectured. He rejected commercial opportunities. He gathered together all the historical experiments in electricity then existing and repeated them to his own satisfaction with his own hands.

At last, at nearly 40 years of age, he felt that he was ready. He took to his laboratory, and, on a lead furnished by Ampère, worked furiously for three months

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Preciseness of writing, coupled by close attention to detail and sharp observation, developed in Faraday a lucidity of written and oral expression which has been seldom equaled in scientific writing. He was a popular lecturer, and prominent personages were often in his audience. In this illustration are: the Prince Consort; the Prince of Wales (afterward Edward VII); Prince Alfred (later Duke of Edinburgh); the Reverend John Barlow; Dr. Bence Jones; and Professor Tyndall.



Keystone View Co., Inc.

Graduate

Study at

M.I.T.

By JOHN W. M. BUNKER

FROM the conception of post-baccalaureate study leading to an advanced degree authorized by the Corporation in 1872, through the award of the first such degree to a graduate student in 1886, to establishment of the Graduate School as an administrative unit in 1932, the notable record of its expansion in facilities, resources, courses of instruction, and enrollment through 1939 has been reported in *The Review** by the late Harry M. Goodwin, '90, the first Dean of the Graduate School.

The succeeding decennium has been a period of further expansion and of consolidation. Expansion of numbers has been accelerated by the veterans returning to college and by other qualified applicants from all over the world eager to pursue advanced study in science, engineering, or architecture. The disintegration of universities in Europe has turned the attention of these students to America: the repute of our Alumni has focused this attention upon our Institute.

Within the Faculty, an assiduous cultivation of wartime advances in science and engineering has strengthened our curriculums. Likewise, the increasing awareness of the indispensability to the professional man of reasonable understanding in the so-called "humanities" has contributed to increased educational opportunities at the Institute, and in no sector has this increase been larger or more significant than in the Graduate School at M.I.T. These factors favor expansion.

Just as a tree needs both pruning and cultivation if it is to attain symmetry and to bear fruit, so also is it necessary to curb here and encourage there lest this 17-year-old Graduate School ramify in wild growth. Proliferation is yielding to planned and calculated consolidation.

Since 1898, the Faculty Committee on Advanced Degrees and Fellowships had been charged with administering the affairs of graduate students. From time to time it formulated rules for its own guidance, and in 1917 it set up a code for degree requirements for doctors and masters. In the latter category, it specified fields of study rather than course numbers, which designation, it recites, "gives a greater dignity to their work." Already the foundations had been laid for recognition that Course and Department constitute administrative conveniences and not separate entities in the broad areas of scientific knowledge.

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Currently this committee is known as the Committee on the Graduate School. It includes one member from each department offering graduate work, elected annually by the Faculty, with the dean of the Graduate School as its chairman, *ex officio*. It determines, subject to Faculty confirmation, the policies and procedures of the Graduate School, and exercises certain judicatory functions in respect to their interpretations, and enforcement of needful regulations.

The role of the Committee on the Graduate School, as it is in fact exercised, has developed a character that is uncommon among academic legislative or governing bodies. To this committee there is delegated by Faculty rules a high degree of responsibility and authority. Under its own Rules and Regulations, which have never been questioned by the Faculty, it is the duty of its chairman to "administer the affairs of the Graduate School under the President." It has always been the policy in regard to regulation of Graduate School matters to win espousal of principles rather than to exact compliance with regulations. This policy is in tacit agreement with the principle that in the administration of an educational program, little can be accomplished by rules and regulations alone, no matter how meticulously or comprehensively they are drawn. It is the skilled and informed interpretation of guiding principles by a student's adviser and teacher which affects most significantly the educational service which is offered. In this situation, as in most others, it is the substance and not the form which is important.

The most important function of the Committee on the Graduate School is exercised in its monthly meetings for consideration of proposals which affect the Graduate School as a whole. As a result of the free-for-all discussions in these sessions there are derived from time to time modifications and interpretations of objectives and policies in regard to the education of graduate students.

The promulgation of precise rules, and the detailed specifications of such matters as credits for subjects taken in this school or elsewhere, are kept to a minimum consistent with maintenance of standards and equality of opportunity for all candidates for a given advanced degree in any field which is appropriate for development at the Institute.

The tactics to be employed in meeting the requirements for a degree and the attainment by the student of his educational objective are delegated to those at the operational level, namely the departmental registration officers for graduate students. This results in a degree of individuality in programs of study that is advantageously different from the traditional, and to a large degree inescapable, characteristic of a prescribed core of essential subjects to be "passed" by all students in a specified sequence according to pattern.

Graduate student programs of study are subject to custom tailoring in the endeavor to secure a better fit to individual aptitudes and professional objectives of each student. These professional objectives are subject also to modification and alteration through personal counseling in light of the changing conditions in respect to employment needs and opportunities.

Fashion and vogue affect the choice by students of careers toward which they elect to point. It would be

naïve to assume that each graduate student elects a particular field of specialization in science or engineering solely because of personal preference for that particular field: the question of a job after graduation cannot be ignored.

Thus, as an aftermath of World War II, unusually large numbers of young men presented with an opportunity for graduate study in science and engineering, aware of the great public interest in electronics and in nuclear fission, made these two fields by far the most popular choices for advanced study. Employment possibilities were great for competent men in each of these areas. The approach of supply to industrial demand has been greatly accelerated. Before some of these boys can finish one, two, three or more years of study for an advanced degree, employer demand will surely have become less pressing. It is a function of a graduate Faculty to keep its fingers on the industrial pulse and in anticipation of the attainment of a balance between supply and demand, to inform prospective students of an impending oversupply of professional personnel in any field.

On the other hand, accelerated developments in propulsion by application of energy in ways other than by the internal combustion engine have been recognized by research and development in the fields of fuels, jet propulsion, and gas turbines. Realizing our responsibility as a forward-looking school, there has been made available instruction in recent developments such as these for our students. We must choose when to encourage new vigor, and be alert against mere vestigial survival in our curriculums.

For 1948-1949 the total enrollment in the Institute was 5,400, of which number 3,800 were undergraduates, largely full-time students; 1,600 were registered as graduate students, slightly more than one half of whom were less than full-time students, as shown in Table I.

Head count (as in Table I) does not present a true picture of the effective size of the Graduate School because so many of its students are devoting only part time to study. Applying the appropriate discount factor in each case of a part-time graduate student, the approximately 1,600 students represent a requirement for educational service equivalent to the load imposed by 1,077 full-time students. The effective size of the Graduate School during the past academic year was 20 per cent of the whole student body. Ten years ago, the total registration in the Institute was 3,093; of these, 692 were graduate students, and most of them were carrying full-time programs of study. The ratio of teaching service for grad-

Questions often asked about the Graduate School include:

- 1. How large is it?**
- 2. Is M.I.T. becoming primarily a graduate school?**
- 3. Is teaching of undergraduates being relegated to graduate students?**

The answers to these and other questions about advanced study at the Institute will be found in Dean Bunker's survey of the Graduate School for the 1939-1949 decennium.

uate students to total teaching service has, therefore, not increased during this period. This is not the result of chance but of planned controls.

Our Graduate School, while stabilized as to maximum size for the present, is in no sense fixed in the scope of its educational opportunities. It is in a continuing dynamic state of change in the endeavor not merely to keep up with the times, but to anticipate probable future trends. These changes are initiated in, or approved by, the Committee on the Graduate School before presentation to the Faculty.

An example of one such fundamental change is the authorization by the Corporation in 1948 of programs of advanced study in the engineering departments of the Institute to meet the objective of affording more extensive preparation for professional engineering practice than is to be expected from a program leading to the S.M. degree, but without the emphasis on the bases, methods, and results of original research which characterizes the requirements for the doctorates of philosophy or of science. The final proposal as presented to the Faculty for its recommendation to the Corporation was the result of more than a year's study and examination of needs, facilities, ways and means, and even of semantics in respect to naming the new degrees. The result is a thoroughly considered plan to offer to engineers an opportunity to develop greater potential of professional competence (insofar as this can be developed in school) not through a sharpening of the specialization of the master of science but by broadening the base of understanding in areas ancillary to that of the major specialization.

The degrees, aeronautical engineer, chemical engineer, civil engineer, and so on, as granted by M.I.T.,

TABLE I
NUMBER AND EDUCATIONAL LOAD OF GRADUATE STUDENTS 1948-1949

| Full-Time Students | | Academic Staff-Students | | | | | | Special Graduate Students | | | | TOTALS | | | |
|--------------------|------|-------------------------|------|-----------------|------|-----------------|------|---------------------------|------|--------------------|------|--------|------|------|------|
| 100% Load | | Full-Time 33% Load | | ½ Time 60% Load | | ¼ Time 80% Load | | 2-6 Subj. Ea. 100% Load | | 1 Subj. Ea. 0 Load | | | | | |
| Vet. | N-V. | Vet. | N-V. | Vet. | N-V. | Vet. | N-V. | Vet. | N-V. | Vet. | N-V. | Vet. | N-V. | Vet. | N-V. |
| 399 | 372 | 159 | 155 | 126 | 95 | 38 | 9 | 13 | 19 | 142 | 70 | 877 | | | |
| 771 | | 314 | | 221 | | 47 | | 32 | | 212 | | 1597 | | | |

recognize not a mere intellectual veneer from two terms of electives on top of a master's program: on the contrary, they recognize the satisfactory completion of a well-integrated program with a broad base of pertinent subjects culminating in a final demonstration of the student's ability to choose wisely from extensive resources the means for solving professional engineering problems such as he is likely to encounter in his later life, the whole program comprising at least two years of planned advanced study beyond a baccalaureate.

This demonstration may take the form of a comprehensive examination, or the solution of an engineering problem that will call upon the student's sources of information, or it may be a thesis of similar characteristics. The decision in each case is left to the department in which the student is enrolled. Each student in the Graduate School is enrolled for registration convenience, in some one department, usually in that in which the principal subjects in his major field are offered. The subjects approved for his registration must constitute an integrated program of study and may be selected from those offered in any department, provided their subject matter is pertinent or contributory to his educational competence in his major field.

There is, of course, a hazard in too great a degree of specialization. A professional man spends about one third of his life in the practice of his profession, about one third as a mere human being in sleep, but there remains a third for his life as a citizen. No man can live unto himself alone. Just as there is no place for national isolationism, so also there is no satisfying existence for the individual isolationist. If a college boy thinks of this aspect of his future at all, he may comfort himself with the good intention of becoming informed about literature, the fine arts, sociology, and his obligation as a citizen after he becomes established in his career. To be sure, many effective citizens have done so, including those who have not been fortunate enough to have shared a university life.

There is a tendency for a professional school to become preoccupied in professional education. It may be asserted, with reason, that scientific education induces habits of analysis and reasoning that equip a man to intelligently examine and solve any type of problem. It is true also that one must and can educate himself. As Abbott Lawrence Lowell once said: "Every capacity worth having can be developed only by personal effort, and brought to a high point only by carrying the effort far . . ." Nevertheless, it is equally true that intellectual, as well as physical, expertness can be attained more effectively in a given time under expert coaching than by self-teaching.

With other reputable engineering schools the Institute includes in its undergraduate curriculum a definite amount of class work in English, history, economics, and the Humanities. A planned sequence of such studies has been prescribed since 1945, replacing the former elective General Studies. It seems reasonable therefore to require of graduate students, who receive advanced degrees from M.I.T., at least a substantial amount of similar studies. If this requirement has not been met elsewhere, it must be satisfied while

enrolled in the Graduate School by election of undergraduate subjects or by participating in graduate seminars in the Humanities.

The graduate seminars in Humanities are an experiment in education. They have been established for graduate-student participants only. They are limited to 20 men each and constitute a joint inquiry and discussion under the leadership of an outstanding expert in such fields as reading of famous books, problems in philosophy, economic and industrial history, economic problems, international affairs, and psychological concepts. No grades are given. No final examinations are held. The goal of expert knowledge is substituted for attainment of academic marks. A student who does not pull his oar is dropped from the squad. A senior colleague coaches his juniors.

In at least one seminar, successive classes have petitioned to be allowed to continue their study with their instructor. This appears to be an encouraging departure from didactic instruction, ingestion, and regurgitation on final examination day, which too often is followed by complete forgetfulness once the grades are in.

The master of science was the terminal degree for most of the 240 engineers who were awarded degrees in June, 1949: those receiving the doctor of science numbered 30. Of the nonengineers, 40 received the doctorate of philosophy as compared with 11 masters. One degree of electrical engineer inaugurated the award of this degree, and for the first time, the graduates of Course XIII-A received the new degree, naval engineer. These figures are reasonably typical of the current preferences for terminal degrees at the Institute in engineering and science.

In order to operate at the highest possible level of usefulness, a school must possess not only able and skillful teachers but also a student body capable of learning to the extent and at the speed which will utilize the services available. To the Faculty of M.I.T. there is accorded the pre-eminence which it deserves. Its student body is maintained at a high level of capacity through selective admissions.

To the Graduate School there are currently admitted about one half the number of our citizens who apply, and about one quarter of foreign applicants. The maintenance of a favorable differential between numbers of applicants and of admissions is not an evidence of intellectual snobbery; it is a condition that insures a student body of such high caliber that the most able are not held back by laggards. Rarely does a teacher so submerge his sympathies as to point his instruction solely to the best students. It is common knowledge that the progress of a section is governed by the slowest in the group.

While it must be conceded that there is need in the technical world for service in the ranks as well as at the officer level, it is not efficient for a leading educational institution to operate as a school for privates if there are available sufficient candidates of appropriate capacity to train for leadership. To be sure, the subsequent careers of its Alumni, whether they remain in the rank and file or whether they advance to leadership depend upon many factors not controllable in school, but the experience in school can determine

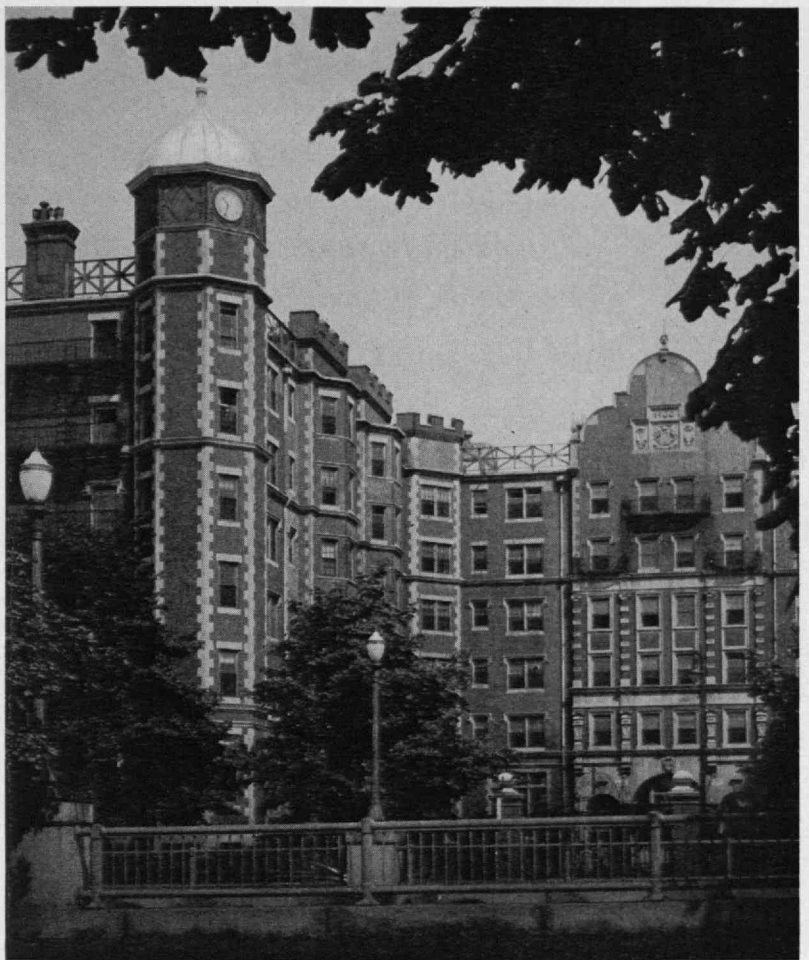
whether or not it will be possible to realize opportunity for advancement when it presents itself. Under the stimulus of the intellectually able students now enrolled in the Graduate School, their professors are really going to town. This stimulus has a beneficial effect also upon their undergraduate teaching.

Foreign students, faced with the disruption of European universities in the war-ravaged areas, are turning to the United States. Those in science and engineering in large numbers turn to M.I.T. Before the recent restrictions on conversion of foreign currencies to dollars, the tide of foreign applications for admission to our Graduate School was tremendous. Faced with the necessity of establishing limits on acceptances, after wide consultation with officers of this and other institutions and governmental agencies, the proportion of 10 per cent of our total number of graduate students was picked as the upper limit of the extent to which it seemed fair that our own boys might yield places to their colleagues from other lands. This restriction, together with dollar shortages, has somewhat relieved the pressure, but there were in late 1949 a significant number of applicants with most persuasive credentials from other lands to whom we regretfully had to say, "Sorry, no more room this year."

The academic excellence of the work of the foreign students compete on an equal basis has been won by fellowship and scholarship aid for which all graduate students compete on an equal basis has been won by as large a proportion of foreign students as of our own citizens. This is a healthy situation.

According to a recent publication of the Institute of International Education, of the 25,000 foreign students studying in the United States in 2,500 educational institutions in 1948-1949, M.I.T. with seven per cent of its total enrollment given to foreign students (graduate and undergraduate) leads all other schools in the extent of this hospitality. In actual numbers, it is in seventh place.

The academic grades of our graduate students as a whole are higher than those of our undergraduates as a group. This has occasionally been misinterpreted to indicate less rigorous standards or excessive sympathy upon the part of instructors of the more advanced group. This is definitely not the true explanation. When one considers that graduate students represent substantially the top third of baccalaureate holders, that these students have elected to invest time and dollars in advanced studies in fields of their own selection, it is apparent that in them there exists motivation and trained-study habits both of which contribute to excellence of academic performance. Were such a selected body of students not to earn higher average grades than those of the much larger numbers



Henry B. Kane, '24

The Graduate House, adjacent to the Institute's main academic buildings, provides comfortable living for 453 of the Institute's graduate body.

of undergraduates from whom they were selected, it would indeed be an arraignment of graduate-school instruction.

Associated with the idea of graduate-school instruction there is always the topic, research. To the uninformed, research may appear to be the significant difference between undergraduate and graduate study. The relatively greater importance attached to the thesis requirements of advanced degrees, over those of the bachelor's degree, contributes to this impression. By and large, graduate studies at M.I.T. prepare for professional practice in much larger proportion than for careers in research. This is illustrated by the distribution of advanced degrees awarded in June, 1949, as set forth above, and is emphasized by the establishment of the recent engineer degrees.

In successful professional practice in science, engineering, architecture, or management, problems constantly arise which must be solved by a marshaling of experience and by the elucidation of new facts. Research consists of solving of problems. The technique of reliable methods of effective research can be acquired, in the initial stages at least, most economically of time and with the least amount of wasted effort under skilled guidance, demonstration, and instruction. Research methods do have an important place in graduate training, but are not the major preoccupation of the graduate student nor of his teachers.

(Continued on page 63)

Training for Family Living

*The Future of All Societies Depends upon the Integrity
of the Family whose Aim Should Be the
Perfection of Character*

By M. F. ASHLEY MONTAGU

THE family is in trouble, not only in America, but elsewhere in the world as well. In America, one in three marriages ends in divorce, whereas in England the ratio is one in five. Juvenile delinquency rates increase each year with predictable regularity. These are but two of the most conspicuous evidences of family disorganization. Meanwhile, father grows more tired, and mother's voice more shrill, while "Junior" and "Sis" go their own way to the uncomprehending bewilderment of their parents.

Modern parents often find it difficult to understand why their children aren't what they expected them to be. They blame the comics, the movies, the radio and television programs, and other commercial vendors of false values. Shocking and iniquitously bad as these incubi of the modern world so frequently are, in their hearts, most parents sense that something much more profound than these is responsible. They know not what, and they are confused, puzzled, and worried. Having explored every other possibility, occasionally parents will fall back upon a last quizzical, and generally rhetorical remark: "Maybe we're to blame. Maybe we haven't done the right thing."

It should be clear, however, that well-meaning parents who have done the best of which they are capable are not solely to blame if the children are pretty much what their parents have made them. Most parents try to do the best they know how by their children. That "best they know how" comes to them from the society in which they have themselves been brought up, quite as much as from the society in which they bring up their own children. Because the parents are the transmitters of the accepted values of society to their children, it is their responsibility to bend every effort to see to it that those values are substantially right. From wrong causes you cannot expect right effects. If potential parents are not taught how to produce well-integrated personalities in their children, whose fault is that, if not that of the society whose way of life sets the style and gives the wrong leads?

Society, if anyone, is to blame, not the parent. If any parent prematurely wishes to heave a sigh of relief at this piece of news, let him pause awhile, for while he may be exonerated of culpable guilt, he must remember that it is people like himself who make a society. All of us participate in the making of a society by the way we behave in it. And the way we behave has been largely conditioned by the way of life of the society in which we have grown up. This sounds pretty much as if man is caught in a circular trap from which there is

no escape. For if he has been largely conditioned by society to behave as he does, how is he ever going to see the defects of what he has thus learned, and what is more, how can he ever transcend those conditions so that he may be in a position to change them?

Fortunately, the answer to those questions can be clear and unequivocal. Through thought alone, or merely by wishful thinking, at any rate, man may not be able to add a cubit to his stature. By putting his mind to work, however, there is very little that he cannot do, so far as the understanding and influencing of behavior is concerned. It is because man is capable of learning and modifying not only his own behavior, but also that of other people, that we have every hope for the future of mankind's happiness.

Each Life a Philosophy

Every way of life is a philosophy of life. A way of life is what people do about the process of living — not alone on Sundays, but through every moment of the day. What a person does is what he believes, and what he does is behavior. Any act of a human being, as of any living thing, is behavior, so that what a person does is, in other words, the expression of his beliefs in behavior. What a person believes is what he does, not what he says. If you want to know what a person believes, observe what he does, and you will know what he believes.

Now, many of the things in our way of life in America that we take most for granted, and that most of us believe in, and therefore about which we behave in certain ways, are not all that they should be. It will pay us to ask some simple and direct questions.

What is the dominant value or drive or goal in American life? What is it in this great land of ours that men want most? Think a moment. Yes, you are right. The driving force is success—money. Success, in this country, is usually measured in terms of money. When anyone says, "He's a very successful man," the image that statement usually creates is of a dancing series of dollar signs. A man's worth is measured not by his quality as a human being, but by the quantity of dollars he has managed to accumulate unto himself. Thus we come to the point at once. Our highest value in America, as in the entire industrial world, is a purely material one measured in terms of success and money. This is the operative value system of the world in which we live. This is the world into which we have been turned and into which our children, in turn, grow into social, striving, beings.

Whatever we may think and say to the contrary, spiritual values play very little, if any, part in our lives. The conviction of duty toward the Creator and toward one's fellow man is not manifest in our daily behavior. To love one's neighbor as oneself, fully understanding that whatsoever you do unto him you do unto yourself, forms no part of our daily practice. The consciousness of a common unity and a common purpose for all mankind is as far from accomplishment today as at any time in history. That all of us, in our great variety and diversity throughout the world, are God's children, and that "to *every* man belongs the worship and the glory" are thoughts to which lip service is given once a week, at most. That the greatest success is to be a good, loving, human being is rarely recognized and we never regard anything short of that as a failure.

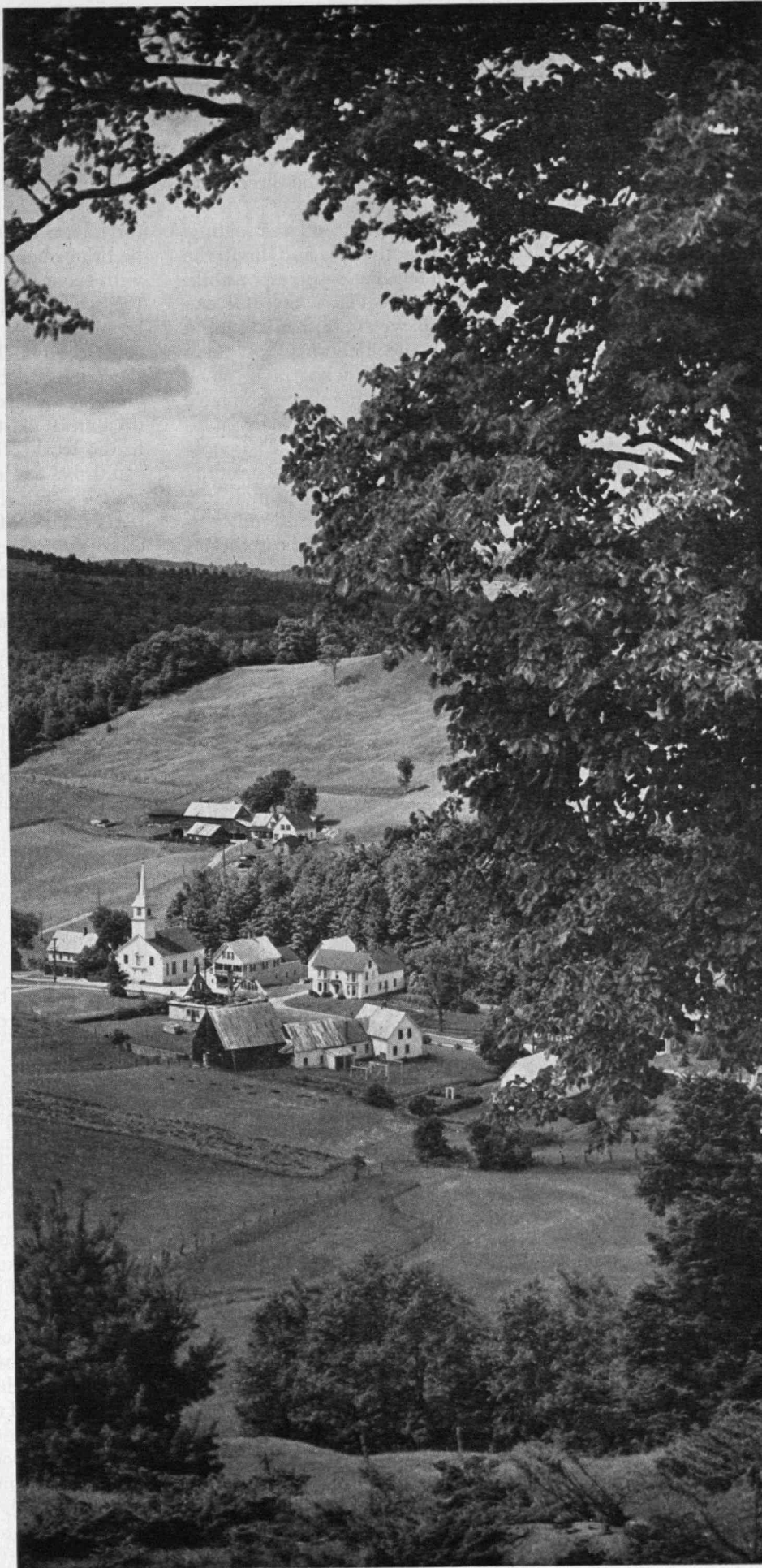
Certainly all of you have heard these ideals expressed before. Most of us learned them, as one lad put it, at our mother's knee — and at other joints — at Sunday school, at church, and elsewhere. These ideals constitute a part of the faith of our society. They belong to the covert system of our beliefs, about which we may talk, but they do not belong to the overt system of our beliefs, about which we trouble to do something.

The trouble with modern man is that he has lost his spiritual faith, and replaced it with a disastrous faith in material things. Yet this materialism is the faith we teach our children. No matter what we wish our children to become, to a very large extent they do become what we are. And what we *are* is what we *do*, not what we say we are or what we tell our children to be. We are their models, and it is from what we do, not from what we say, that they learn.

It follows, therefore, that if we want our children to grow up to be good human beings, in the only

When towns and villages formed the pattern of living in the United States, American family life was untroubled by many of the ills which now plague it. Today, with one quarter of the country's population living in cities of 100,000 or more, relatively few families enjoy the healthful, reposed living which this photograph of East Corinth, Vt., suggests.

David W. Corson from A. Devaney, Inc.



sense in which goodness means anything, we had better take a good look at ourselves. Is it family-centered life that we are really interested in, or is it a self-centered life? Every parent must answer this question for himself. More pertinently, this is not a question for parents but for potential parents. Like Samuel Butler's answer to the question "Is life worth living?" he replied that the question should not be directed to a man, but to an embryo.

Children are exacting, exhausting, chore-creating. They cramp one's external activities, and limit the range of one's pleasures. They increase responsibilities and reduce the amount of caviar which one can put upon the bread by which, we are told, man cannot live alone. Furthermore, in the modern world there are many who believe that those who travel alone travel farthest and most rapidly, while those who have given hostages to fortune have hung so many millstones around their necks. There are so many people in our society today who have lost all understanding of the true nature of life, particularly of human life, that they consider the family an archaic and unnecessary institution. One result of this attitude is the increase in the number of couples who have no children; another is the (unsuccessful) attempt of the state to assume the parental role. For those of us who have children the problem remains: How can we integrate the family, and properly train our children?

The first thing to realize is that bringing up a family is a full-time job which most of us are attempting to do on a part-time basis. Like marriage, family life is the best and greatest test of a person's character which has ever been devised. Freud has said that there are three impossible professions: The first is psychoanalysis; the second, bringing up children; and the third, the government of nations. I am inclined to believe that most parents will regard the bringing up of children as the most impossible. For most people, devoting all one's time to the cultivation of one's children is an impossibility under modern conditions of life. But by a "full-time job" I do not mean devoting every minute of the day to the children. In any event, that would hardly be desirable. It is not the quantity but the *quality* of the attention which parents give their children which matters. Parents must have an awareness, much more of the time than many of them seem to have, that children don't just grow, and that it is the parental duty to take obligations toward their children and toward society more seriously than they have been doing, not alone in the past but also in the present.

Primary Requisite for Progress

Parents, and even nations, must realize that the family itself is the highest of all the values of any society. Our attitudes (and attitudes are values) toward the family will determine the character of the family. Hence, a primary prerequisite for progress in the right direction must be a reconsideration, a revaluation, of our attitudes toward the family. No state, no institution, and no idea can ever take the place of parents within the family. If any of us have ever been disposed to think that the future points in the direction of non-familial life, we may as well abandon all such ideas.

We now know enough to be able to say that the future must see the development of more, rather than less thoroughly integrated family life. The future of civilization — of all civilizations, and of all societies — depends upon the integrity of the family; and familism must become in itself a way of life, because it has prestige over other ways.

The exhausting domestic chores of mother, the absence of father from home during the greater part of the day, the fatigue of body and often of soul which he brings home with him at the end of the day, along with economic and other worries incident to daily living, would hardly seem to provide an adequate background against which to care for the characters or the souls of one's children. For I conceive the function of the family to be nothing less than that: the care of children's souls. The bodily needs of American children are at least as well taken care of as anywhere else in the world, though even here some improvements could be made. But further improvements in the child's physical welfare can wait upon the more important task. Meanwhile, what can parents do under the conditions of life in which they find themselves at present, more closely to integrate family life?

Satisfaction of Dependency Needs

I should recommend first, that they love their children more. Of course I do not refer to the weak-charactered, overindulgence or overprotective "smothering" which frequently passes for love, or the refrigerated kind of formal affection which is brought out for use when the occasion is thought to require it. That kind of affection is not love. Love may be defined as the satisfaction of the dependency needs of the person. Every human being is born with, and subsequently acquires, needs for the satisfaction of which he is dependent upon other persons. By having those needs satisfied from earliest infancy by the mother, the child comes to identify the producer of satisfactions, usually the mother, with pleasure. In this way it comes to love the mother, and in so doing takes its first step toward becoming a social human being. By being loved, it learns to love others. A child that has not been loved, never learns to love other human beings, and throughout its life remains a defective human, an inadequate social being. Such a person is incapable of warmth, is cold and awkward in his social relationships, craves affection more than anything else in the world, but is quite incapable of returning it. There is no known psychotherapeutic means for turning such a person into a warm human being.

If such damage can be done to the developing person within the first year or two of life, damage of a not dissimilar kind can be done to the child that has been adequately loved in infancy, but inadequately loved during later childhood and adolescence. In accordance with the definition given above, inadequate loving is here used to mean the inadequate satisfaction of the needs of the child.

One way of looking at a need is as a problem which requires solution. Do we do our very best to solve the problems which our children present to us? Do we do all that we can to help them solve their problems? Let

(Continued on page 58)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Science and the Humanities

President Killian's Report to the M.I.T. Corporation Calls for a Fusion of Science and the Humanities without Weakening Either

FOLLOWERS of activities at M.I.T. may be expected to evince more than usual interest this year in the President's Report which was presented to members of the Corporation at its regular meeting on October 3. It is, of course, the first such annual report to come from the Institute's new president and it reflects the touch of the skillful writer, as readers of *The Review* would anticipate. But in recounting the progress which has been made during the last year under his presidency, Dr. Killian has found opportunity to set forth his philosophy of education: He calls for "better linkages between science and the humanities, with the object of fusing the two into a broad humanism . . ." and believes that education should aim to "strengthen the aristocratic virtues of personal dignity, self-reliance, and self-understanding." It is this philosophy to which Technology Alumni and educators must look for a preview of educational things to come at M.I.T. In this issue, *The Review* is pleased to present a comprehensive condensation of those portions of the Report which deal with the year in retrospect. A later issue will deal with student life and statistical information of special interest.

Recalling the stimulating effect of the Mid-Century Convocation last spring, when he was inducted as the Institute's 10th president, Dr. Killian expressed the hope that the Institute "can continue to sponsor an increasing number of meetings which bring together the scholar and the public and which afford opportunities for representatives from education, public life, industry, and other fields to come together for comprehensive discussions of current problems, both technical and general."

The Convocation prompted many other observations, two of which are singled out for special mention by President Killian:

1. During the past half century, specialization has been an outstanding characteristic of scholarship and professional activity. The tactics and strategy of intellectual advance have required specialization, and specialization has moved from one triumph to another. The tactics and strategy of the second half century will require a specialism equally strong but tempered by less isolationism among scholars and more linkages between fields of scholarship. We know that in science the boundaries between sciences are becoming less and less definable and

that overlapping sciences, such as biochemistry and geophysics, reflect in their vigorous growth the interdependence of specialized investigations. We find, too, that in our university organization we must devise new organizational methods, such as interdepartmental laboratories and programs, in order to provide an integrated approach to fields such as nuclear science, international relations, electronics, and public administration. In his authoritative study, *The Universities of Europe in the Middle Ages*, Rashdall* concluded that the true university is "a place where the different branches of knowledge are brought into contact and harmonious combination with one another." Our goal today is to achieve this harmonious combination and intercommunication.

Similarly, we need better linkages between science and the humanities, with the object of fusing the two into a broad humanism that rests upon both science and the liberal arts and that does not weaken either. We need a bifocal vision to thread our way among the problems of modern society.

If we can achieve such intellectual integration, the basis of the conflict between general and specialized education will have been removed. In fact, we have long passed the stage where there can be any legitimate debate over the competing effectiveness of specialized and general education. Both are essential. General education alone can result in superficiality and dilettantism; specialization alone, in narrowness and social myopia. To achieve a working partnership, however, requires an end to narrow jurisdictional differences in education. President Baxter at our commencement exercises last June spoke eloquently of the need for flinging more two-way bridges between the liberal arts and the sciences. The colleges must bring about this two-way traffic if they are to educate men who can, as specialists, bend specialism to the broad needs of our society.

2. My second observation prompted by the Convocation is that education, if it is to serve a free society, must not only train men who can do the complex, specialized work of society; it must also cultivate in these men a reverence for the dignity of the individual. Someone has said that democracy is most effective when it tries to make all its citizens aristocrats. It might also be said that education in a democracy is most effective when it strengthens the aristocratic virtues of personal dignity, self-reliance, and self-understanding.

Men with these qualities resist all forms of statism and Stalinist totalitarianism that regiment and depreciate the individual. Men with these qualities are also more immune to fear and frustration. President Bixler suggested at the Convocation that our chief peril is a loss of faith in the power of mind to solve society's problems and a consequent tendency to pick scapegoats — as, for example, blaming science for society's ills. The education that helps men avoid these aberrations must possess a synthesis of the general and the specialistic that brings, within the limits of our knowledge, the whole of life into view.

* London: Oxford, The Clarendon Press, 1895.

SIGNIFICANT QUOTATIONS FROM PRESIDENT KILLIAN'S REPORT

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Membership in the Communist Party disqualifies teachers because it involves adherence to doctrines and discipline completely inconsistent with the principles of freedom on which American education depends.

In our educational program at the Institute these considerations have great influence, and the Mid-Century Convocation served to point up and extend this influence. The fact that an institute of technology held a convocation that enquired so widely and deeply into the social problems of the mid-century is evidence of a vigorous humanism that recognizes the interdependence, unity, and social value of all useful learning.

During the past year there has been much activity in rebuilding Technology for its expanded role in post-war education and research. Since Review readers have already been made familiar with the major portion of this program, particular attention is given to those portions of the President's Report which have not already been reported in these pages, or which, for one reason or another, deserve once more to be emphasized.

The Development Program. Last November more than 300 members of the Committee on Financing Development met at the Institute and launched the organizational work of the campaign to raise a sum of \$20,000,000 for M.I.T. The organizational work, as recorded in The Review, has now been completed, but "In the weeks ahead," said Dr. Killian, "we must concentrate on obtaining very large gifts from individuals; these are essential if we are to reach our goal."

Industrial Liaison Office. Of increasing importance in the Institute's program of education and research is closer co-operation with industry. Companies making substantial grants-in-aid to the Institute do so under an arrangement whereby the Institute undertakes to keep the companies systematically informed about research and educational activities at M.I.T.

which are important to the business of the companies. "To insure that the Institute's obligations under these industrial grants are fully carried out," President Killian reported, "we have established an Industrial Liaison Office. The office is directly responsible to the president, and its policies and activities have been carefully studied by a committee representing the faculty and administration." The objectives and opportunities of the Industrial Liaison Office are described by Dr. Killian as follows:

Large industries realize that their leadership tomorrow must stem from an awareness and understanding of the new scientific knowledge and techniques of today. For any one industry the fact applies not to one research field alone but increasingly to all the sciences and fields of engineering. . . .

This situation, I believe, presents M.I.T. with a superlative opportunity for widened service to the industrial community. The Institute conducts a research program of such vitality and diversification that we may truly claim a unique position. There is no more logical institution than this to which industry should be able to turn for such assistance. I hope we may accept this challenge, and by our own devices see to it that the significance and potentialities of our active researches are made more readily evident to industry than has been the case in the past.

The Educational Program. In reporting to the Corporation on the Institute's educational program, President Killian spoke of the new engineering degrees recommended by the Faculty (The Review, 51:518), the recently established Oak Ridge Engineering Practice School (The Review, 50:386), the Sloan Fellowship Program (The Review, 51:28). Co-operative undergraduate courses for the Departments of Mechanical and of Aeronautical Engineering, in which students have about 70 hours of practical experience in a particular industry, in addition to their academic work at the Institute, were also announced. The Department of Chemistry has initiated a course of study and research leading to the degree of doctor of philosophy in analytical chemistry, thereby placing this branch of chemistry parallel with inorganic, organic, and physical chemistry as a course of study for graduate students. Other developments in the educational program were described as follows:

During the year the Department of Metallurgy, together with the Department of Mechanical Engineering, has continued the development of its Metal Processing program planned to bring into fruitful liaison the designer who must employ metal in a machine or structure and the metallurgist who is a specialist in metals. This program, as well as the whole broad field of metal fabrication, is assured of its fullest development at the Institute by Mr. Sloan's gift (The Review, 51:577) of \$1,000,000 for a Metal Processing Laboratory. Architectural plans are now being drawn for this building, which will be located on the south side of Vassar Street, adjacent to the Guggenheim Aeronautical Laboratory.

The Committee on Educational Survey, appointed three years ago by the Faculty, has completed its study, and plans to report to the Faculty this fall. Without anticipating the conclusions of the committee, I can report now that it has conducted its studies in a manner that has stimulated the educational planning of the entire institution and that has already brought lasting benefits through the interchange of ideas which have been promoted throughout the Faculty.

Steps were taken during the year to restudy the objectives of the Institute's summer program, and (as recorded on page 36 of this issue), Walter H. Gale, '29, Associate Professor of Aeronautical Engineering, has been appointed director of the Summer Session. Finally, two colleges, Pomona at Claremont, Calif., and Wesleyan at Middletown, Conn., were added to the list joining M.I.T. in the plan for combined liberal arts and technological study. This brings to 14 the number of liberal arts colleges participating with the Institute in providing a liberal and technical education.

Improvements in Facilities and Environment. During the past year, many improvements in the Institute's facilities and environment have been made; in fact, the building program under way last year was the largest in the Institute's history, except for the period in which the new buildings in Cambridge were erected during World War I.

The Charles Hayden Memorial Library has been going up on schedule and that part of the library building which is to house the humanities departments was occupied in early August. The 277-acre estate of the late Colonel Edward H. R. Green, on Buzzards Bay, near New Bedford, has been used by students and Faculty during the year for recreation and study. Many other important uses for this estate are envisioned as soon as funds become available. In announcing another important property acquisition, President Killian stated:

Of long-term importance in the improvement of our campus was the purchase last month of the "Tech Block," the building on Massachusetts Avenue opposite the Rogers Building. With the exception of the State Armory at the corner of Massachusetts Avenue and Vassar Street and the Technology Store, the Institute now owns all the frontage opposite our main educational buildings on Massachusetts Avenue.

The President's Report also dealt with progress in such new structures as the Supersonic Wind Tunnel (The Review, 51:282, 575), the 12,000,000-electron-volt electrostatic generator (The Review, 51:30, 41, 576), the Hydrodynamics Laboratory (The Review, 51:284; 576), and the new Eastgate apartment building (The Review, 51:171, 576) which have already been reported in these columns.

Academic Freedom. Turning to a matter of current interest, during the era of the "cold war," President Killian reaffirmed a policy formulated when he became president (The Review, 51:432). Dealing with the problem of academic freedom, he said:

Last spring a formal statement of policy was issued reaffirming freedom of teaching and investigation at the Institute. This statement also reaffirmed the Institute's unequivocal opposition to communism and to any external control of the teacher which requires him to distort his research or teaching in accord with any "party line" or dictates from without his own mind.

Other educational institutions and groups, notably the Educational Policies Commission of the National Educational Association, subsequently took similar positions supporting the freedom of the scholar and declaring that membership in the Communist Party disqualifies teachers because it "involves adherence to doctrines and discipline completely inconsistent with the principles of freedom on which American education depends."

Welcome, 1953

THE most encouraging trend in student life since World War II has been the trend toward social maturity, James R. Killian, Jr., '26, President, told members of the entering Class of 1953 at a dinner of welcome in Walker Memorial on September 15, as approximately 700 students from about 46 states and 60 foreign countries converged on Cambridge to begin their studies at M.I.T. Dr. Killian's address was the first event in a new kind of extended week-end program planned to acquaint freshmen with the Institute's objectives, its facilities, and its personnel.

In his welcoming address President Killian stressed his conviction that in 1949 no college can shirk the responsibility of preparing a man to be a citizen as well as to make a living. "We believe," he said, "that scientists and engineers and architects must be more than narrow specialists if they are to perform their proper functions in modern society. They must have the breadth and judgment, the background and understanding, to be leaders in their professions and their communities."

He added that education is to be found not only in the classroom and laboratory but in the experience of living with one's fellows and in the acceptance by students of the fullest possible responsibility for managing their own affairs.

The Institute's freshman week-end program, the largest in its history, was attended by 550 members of the entering class of approximately 700. The program included tours of the Institute to familiarize the

In three seasons out of four, winter being the exception, members of the M.I.T. Nautical Association take delight in maneuvering their dinghies on the Charles River.

M.I.T. Photo



students with the buildings and laboratories, as well as demonstrations of the athletic facilities. Every freshman was given a directory containing photographs of the members of his class, an innovation designed to encourage student friendships.

At the dinner Professor B. Alden Thresher, '20, Director of Admissions, introduced Dr. Killian and other members of the administrative and academic staff, including: Everett M. Baker, Dean of Students; Thomas K. Sherwood, '24, Dean of Engineering; Professor John T. Rule, '21; George R. Harrison, Dean of Science; Professor Raymond D. Douglass, '31; Professor Francis W. Sears, '20; and Professor James A. Beattie, '17.

The week-end program was continued on September 12 at the Institute with talks by: William W. Wurster, '17, Dean of Architecture and Planning, who spoke on architecture and planning; John E. Burchard, '23, Dean of Humanities, who discussed the Institute's program in humanities; Professor Howard R. Bartlett, Head of the Department of English and History; Dr. Dana L. Farnsworth, Medical Director; and Colonel Harold R. Jackson, Head of the Department of Military Science and Tactics.

Following the morning program, members of the Freshman Class left by busses for Camp Wonderland for a two-day orientation program during which time they were addressed by members of the Institute's Faculty, heads of the student activities, and the various athletic coaches, who also arranged contests in baseball, rowing, and track events. They also heard talks by: Klaus Liepmann, Assistant Professor of Music; Pennell N. Aborn, in charge of student employment; and, in the evening, an address by Donald F. Carpenter, '22, formerly chairman of the Corporation Committee on Student Activity.

The Class returned to the Institute Sunday morning, September 18, and in the afternoon they attended a reception by President Killian for entering students and their parents.

For Summer Study

WALTER H. GALE, '29, Associate Professor of Aeronautical Engineering at M.I.T., has been appointed to the newly created post of director of the Summer Session at the Institute as announced on September 25 by President Killian.

In making this announcement, Dr. Killian pointed out that the Summer Session Office, now established at the Institute under Professor Gale's direction, will be responsible for co-ordinating both the regular summer academic schedule, designed primarily to meet the needs of M.I.T. students, and special activities of outstanding value and benefit to others not associated with us during the regular school year.

The Institute's over-all objective in creating the new office is twofold: (1) to utilize the facilities of the Institute during the summer months to the advantage of industrial, technological, and scientific people who cannot participate in the Institute's year-round academic program; and (2) to provide parts of the regular academic program for members of the M.I.T. student body who wish to remain for study in Cambridge during the summer.

In commenting on the creation of the Summer Session Office, Professor Gale cited the Institute's successful experiences with special summer courses and conferences in such varied fields as textiles, ceramics, spectroscopy, and petroleum engineering. During the summer of 1949, courses designed especially for people from industry and government were held in food technology, and electronic computing methods; a six weeks' program of study for teachers of science in high and preparatory schools provided a review of fundamental subject matter combined with a survey of recent scientific developments.

Professor Gale has been a member of the M.I.T. Faculty since 1946, when he became associate professor of aeronautical engineering. He holds S.B. and S.M. degrees from the Institute, awarded in 1929 and 1930, respectively. He was a research assistant in the Department of Aeronautical Engineering at M.I.T. from 1930 to 1935, and served in the United States Navy in Washington, D.C. from 1942-1945.

Co-operation in Textile Studies

Two pioneers and leaders in textile technology, the Lowell Textile Institute and M.I.T., will pool their facilities beginning this autumn for the benefit of graduate and undergraduate students of New England's historic industry. Increased educational opportunities to students and an interchange of staff members of both institutions were assured in the plans for co-operation announced by Dr. Killian, President of M.I.T., and Kenneth R. Fox, '40, President of the Lowell Textile Institute.

This co-operative action covers mutual use of facilities for research and manufacturing at Lowell Textile Institute for M.I.T. graduate student theses, and use of M.I.T. textile division facilities for Lowell Textile Institute student theses, particularly at the graduate level; also, it covers the use of books, periodicals, and theses on textiles and the textile field in the extensive libraries of both schools.

By the agreement between M.I.T. and the Lowell Textile Institute, students of the latter may obtain additional work in chemistry, mathematics, business and engineering, and textile technology at M.I.T. Similarly, M.I.T. students will be given the opportunity of working with textile manufacturing and finishing machinery for cotton, wool, and rayon as summer session and other special courses become available at Lowell. The plans also contemplate the participation of staff members of both institutions in seminars and lectures in existing or in new courses.

For the students there will be regularly scheduled student trips from M.I.T. to Lowell and vice versa; and there are plans for joint meetings and interchange of information between student societies, such as the student chapter of the American Association of Textile Chemists and Colorists, and the Engineering Society.

Commenting on the plan, Professor Edward R. Schwarz, '21, in charge of Textile Technology at M.I.T., said: "The geographical proximity of the L.T.I. and M.I.T. and their common interests in textile education make it desirable that closer official co-operation exist between the two groups. For a number

of years funds have been available for graduate scholarships at M.I.T. for qualified graduates of L.T.I. through a grant by the Proprietors of the Locks and Canals on the Merrimac River. A number of recipients have completed requirements for the Master of Science degree in Textile Technology, including Kenneth R. Fox, now president of L.T.I. From time to time several faculty members of L.T.I. have taken special courses at M.I.T. in the field of textile research."

The program is in line with the Institute's objective of working as closely as possible with industrial problems in its educational as well as its research projects.

Harry M. Goodwin: 1870-1949

THE death of Harry Manley Goodwin, '90, on June 26, 1949, marked the passing of a distinguished alumnus and emeritus member of our Faculty. His contributions to the Institute were marked by constructive originality and effectiveness as educator and administrator. Ever alert to the developments in his fields of physics and physical chemistry, he established in 1906, and headed, the first undergraduate course in America leading to the degree of bachelor of science in electrochemistry at M.I.T.

Drawing upon his own varied experience as a graduate student at Harvard and the University of Leipzig (Ph.D., 1893) followed by postdoctoral study at the University of Berlin, his noteworthy services on the Faculty Committee on Advanced Degrees and Fellowships of which he became secretary in 1907 and chairman in 1921, were recognized by his appointment as the first dean of graduate students in 1926 and six years later as dean of the newly established Graduate School of M.I.T.

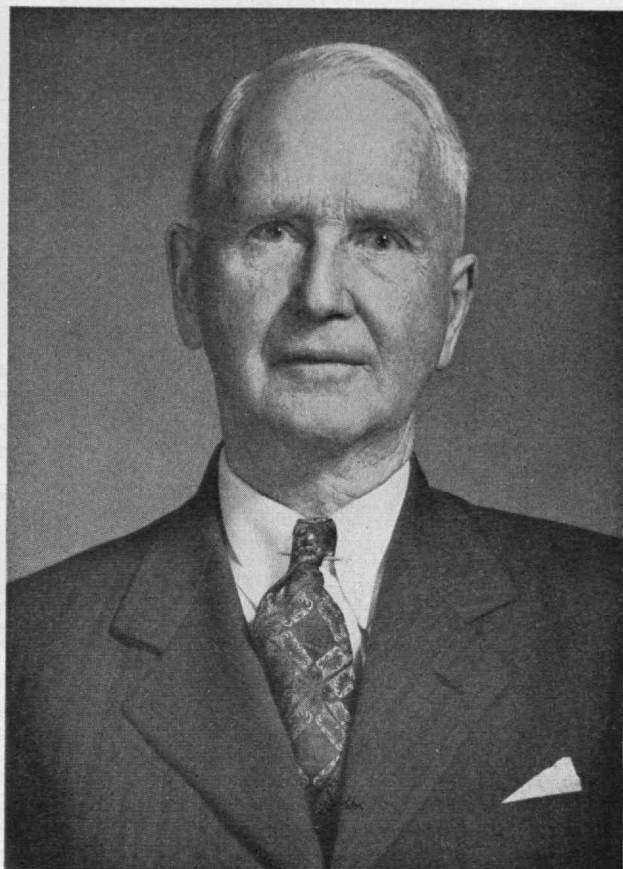
Upon his retirement because of calendar age in 1940, the Corporation conferred upon him the titles of Professor Emeritus and Honorary Dean of the Graduate School. His formal educational services to the Institute were completed as Honorary Lecturer in 1942.

Outside the Institute, also, his participation in matters pertaining to higher education were significant. As our first and continuing representative in the deliberations of the Association of American Universities, the record of his contributions is extensive and significant. Within the Institute, the organization of our Graduate School and the prestige which it attained under his administration are due in no small measure to his untiring and meticulous attention to the educational welfare of our graduate students.

Dr. Goodwin was a fellow of the American Academy of Arts and Sciences, which he served as librarian and vice-president, of the Washington Academy of Sciences, of the American Association for the Advancement of Science, and of the American Physical Society. He was also a member of the American Astronomical Society, and of Sigma Xi.

Always physically and mentally vigorous and alert, buoyant and friendly, but withal invested with unassuming but scholarly dignity, his memory endures in the hearts of his students and colleagues.

He is survived by his widow, Mary B. (Linder) Goodwin and by his son, Richard Hale Goodwin. His last message in the words of the following lines was



M.I.T. Photo

Harry M. Goodwin, '90
First Dean of Graduate Students at M.I.T.

read at his testamentary request to those who were gathered to do honor to him who had lived a full life.

This life, where I have found enough to know,
And love, and hope for, and where all my work
Hath met as fair reward as I can wish,
Will end, as is ordained by laws whose source
Is hid to man. If any other world
Await me, I shall play my part therein
The better for this earth's experience.
Should this life be my last, then welcome rest!
I do not long to go, and do not fear.
I would not have my death cause needless grief,
Or fan the flames of strife I sought to quench.
No friends shall meet to listen round my bier
To pride dogmatic, claiming it has solved
The problems I would have men lay aside,
As far beyond our utmost reach of thought.
Nor would I be a theme for eulogy
Extravagant, by one who knows me not;
And yet I trust my friends would not consent
To see me laid away, without a word
To tell where they may look for strength and peace.
Some friend who knows how rich this life may be
In loving ties, kind deeds, and noble thoughts,
What treasure science opens to patient eyes,
What joy we find in making others glad,
What peace of mind awaits us as we rise
Above the strife of creeds, how bright this earth
Becomes to him who will not be the slave
Of superstition or of vice, shall show
To those who love me, as they meet to see
Me laid to rest, the grandeur of this life,
The sanctity of earthly duties, bliss
Which purity and wisdom give us here!
A nobler requiem I cannot ask.



Fay Foto Service, Inc.

In addition to other activities of the Alumni Day week end, the Class of 1899 celebrated its momentous 50th reunion at a dinner which was held at the Hotel Sheraton in Boston on June 10, 1949. Thirty-two individuals commemorated this event pictorially as shown above. Continuing back from the foreground, at extreme left: Brainerd Taylor, Hervey J. Skinner, George C. Glover, George H. Priest, Harold S. Graves, H. Russell Sawyer; seated at left of table: Arthur H. Brown, Bernard Herman, Harry S. Mork, Timothy C. O'Hearn, Frederic B. Stearns, Harry K. White, Thomas P. Robinson; seated at right of table: Carroll W. Brown, Frederick C. Waddell, Miles S. Richmond, Henry C. Eaton, Edwin A. Packard, Benjamin E. Morse (deceased August 6, 1949), William S. Newell, George H. Perkins, Miles S. Sherrill, Leighton R. Rickards, '33, William A. Kinsman, Etheredge Walker. Standing, from left to right: Arthur L. Hamilton, Burt R. Rickards, Percy W. Witherell, E. Everett Pierce, David C. Churchill, Walter R. Bean, and Charles A. Smith.

Recommendations by the Military

At a dinner and evening meeting in Boston on December 6, 1948, the Visiting Committee on the Department of Military Science and Tactics* first discussed the problem of joint operation of the Army and Air Force Reserve Officers' Training Corps units at M.I.T. So far, the two services have maintained units integrated into a single operating organization with one professor of Military Science and Tactics, one administrative office, and one supply division. However, word had been received that after June 30, 1949, the Air Force would administer and operate its own Reserve Officers' Training Corps program.

The Committee is of the opinion that joint operation of the Reserve Officers' Training Corps program by the two services should be continued. This should insure better acquaintance, understanding, and practical co-operation between the two services, and also should result in greater economy of operation. In the joint program, each Reserve Officers' Training Corps student should be indoctrinated with the concept that he is a member of Armed Forces Reserve Officers' Training Corps, in which the Army, Navy, and Air Force are closely integrated. Care should be taken to avoid an appearance of subordination of one service to another.

The Committee also considered the question of whether the Army and the Air Force should both con-

tinue their Reserve Officers' Training Corps programs at M.I.T., or whether only one of the departments should have such a program at the Institute. This is part of a larger national problem as to whether the Army and the Air Force should operate Reserve Officers' Training Corps units at the same colleges, or whether their units should be located at different colleges. The Committee believes that Reserve Officers' Training Corps units of both departments should be continued at the same institution, where size and other considerations warrant. This arrangement provides the student a wider choice from which to make his selection of a service, takes full advantage of the variety of courses in which the students are trained, and is an aid to the promotion of better understanding and co-operation between the future officers of the Army and the Air Force.

The Committee briefly reviewed the method of providing uniforms to Advanced Course students. The method in use at M.I.T. provides for the purchase of uniforms by the use of funds advanced by the bursar of the Institute, and reimbursement to the Institute in accordance with current regulations on uniform commutation, after the uniforms are procured and issued. This entails a loan by the Institute of approximately \$20,000 for a period of several months. It is believed that the Armed Forces should make arrangements for financing the purchase of uniforms, or otherwise eliminate the necessity for private institutions to carry this load. The Committee was informed by General Collins that legislation is now being considered which would provide for issuing uniforms to Advanced Course students, and dropping them from the records

(Continued on page 40)

* Members of this Committee for 1948-1949 were: Thomas C. Desmond, '09, chairman, Lieutenant Colonel Herbert S. Cleverdon, '10, Raymond H. Blanchard, '17, C. George Dandrow, '22, Colonel Benjamin S. Kelsey, '28, General J. Lawton Collins, and Major General Frank A. Keating.

BUSINESS IN MOTION

To our Colleagues in American Business ...

In coal mining, air is sometimes used instead of explosives. A perforated steel cylinder is inserted in a hole drilled in the coal seam, and air at a pressure of 10,000 pounds per square inch is suddenly released into the cylinder. The explosive force of this high-pressure air is sufficient to disrupt the coal, and do it safely. Air shooting can be used in the same area where men are at work, so that it is unnecessary to stop operations in a large section when shooting.

The air is compressed above ground, and is led to the underground working face through steel pipe. There has to be a flexible connection between the end of the steel main and the perforated cylinder, for ease in handling, and to take the recoil when the pressure lets go. The connection is a copper tube whose specifications are quite different from those of the Revere tube used in such applications as radiant panel heating, refrigeration, plumbing. This tube for the coal mine is special tube indeed, for it is .375 inch in diameter, with a wall .120 inch thick. Thus the inside diameter is less than a third of the outside diameter. When we received the first inquiry for such



tube our curiosity was aroused; the proportions seemed strange until we learned that a pressure of 10,000 pounds per square inch had to be withstood. Then we realized that we had before us another example of the fact that copper is an amazingly versatile metal.

Copper is believed to be man's oldest metal, but

Revere likes to consider it as "the metal of invention", because it has so many admirable qualities that there seems to be no end to its uses. New ones keep coming up. However, there are other good materials too, such as steel, used in this case for the mains between compressor and coal face. The important thing is to use the best material in view

of all the circumstances involved in fabrication and use. Producers of raw and semi-manufactured products know a great deal about them and are delighted to put their knowledge at the disposal of prospects and customers. Revere suggests that now is a good time to review specifications with suppliers; some advantageous new uses may be found for old materials in new forms, or new materials may offer improvements in old applications.

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THE INSTITUTE GAZETTE

(Continued from page 38)

as "expended" when the students graduate. If this legislation is passed, it will solve this problem.

It appears to be the policy of the departments of the Army and of the Air Force to transfer enlisted Reserve Officers' Training Corps instructors from this duty at the end of about three years. Since a man attains his maximum value as an instructor after about one year of duty, the Committee believes it to be desirable that such men be retained on this duty for a longer period if practicable. It was pointed out by General Collins, however, that replacements for men returning from overseas garrisons are urgently required and that it has therefore been found impracticable to permit enlisted instructors to remain on Reserve Officers' Training Corps duty for more than three years.

Attention was given to some of the local needs of the Department of Military Science at M.I.T. The most important needs discussed can be summarized as follows:

(a) At the present time the rifles used by the Reserve Officers' Training Corps cadets for drill purposes are stored in the eastern extremity of the basement of Building 1. Since drill is necessarily held on Briggs Field, or in the Rockwell Athletic Cage, or the Armory, all of which are west of Massachusetts Avenue, considerable time is consumed by the students in picking

up their rifles and proceeding to drill. Moreover, it is impracticable to use the rifles on rainy days, since they get wet while being carried across Massachusetts Avenue. A storage space for rifles in the vicinity of the new Rockwell Cage would eliminate this difficulty.

(b) There is a long-standing need for a new rifle range. The present range is wholly inadequate in size, and its condition is far below the building standards of M.I.T. In spite of this situation, the M.I.T. students have been outstanding in rifle competition. A 25-firing-point rifle range would take care of present needs.

(c) Another urgent requirement of the Department of Military Science and Tactics is more office space. Accordingly, the Committee recommends:

(1) That insofar as M.I.T. is concerned, a policy be adopted of advocating the continued operation of both the Army and the Air Force Reserve Officers' Training Corps units at the Institute, and also joint operation of the two to the maximum extent practicable.

(2) That the proposed legislation referred to by General Collins be considered as a completely satisfactory solution to the uniform problem, and that no further action be taken on this matter at present.

(3) That a heated room or building be constructed in the vicinity of the Rockwell Athletic Cage for the storage and maintenance of rifles used for drill.

(4) That a 25-firing-point indoor rifle range be constructed as soon as practicable.

(5) That the Department of Military Science and Tactics be provided additional office space as soon as practicable.

(Continued on page 42)

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THE INSTITUTE GAZETTE

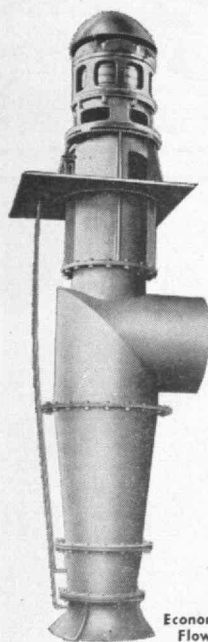
(Continued from page 40)

Architecture Surveyed

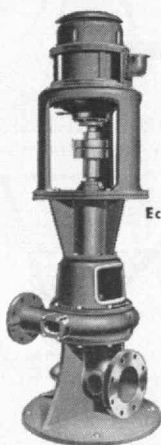
IN general, the problem facing the School of Architecture and Planning seems to be how to deepen and improve instruction in its own fields of specialization, without sacrificing some of the advantages of being part of a major scientific institution. This is one of the conclusions of a report, released for publication last summer, by the Visiting Committee on the School of Architecture and Planning.* The Committee's suggestions revolve around the relationship between this School and the Institute as a whole, with particular reference to the framework of requirements for all students that is aimed more at technologies of engineering and pure science than at technologies of the nature of architecture and planning. The Committee believes that the School is doing an outstanding job in both Architecture and Planning because of the strength of its own faculty and curriculums and because of the strength it draws from being a part of the Institute. The recommendations which follow are an effort to strengthen it still further.

(Continued on page 44)

* Members of this Committee for 1946-1947 were: Ralph E. Flanders, chairman, Harry J. Carlson, '92, John T. Howard, '35, William E. Hartmann, '37, William Emerson, George F. Keck, and George Nelson.



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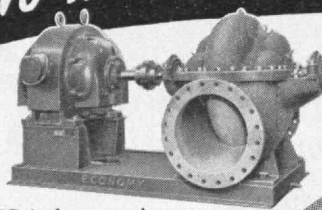
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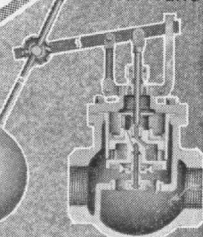
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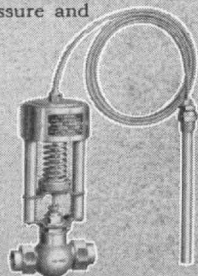
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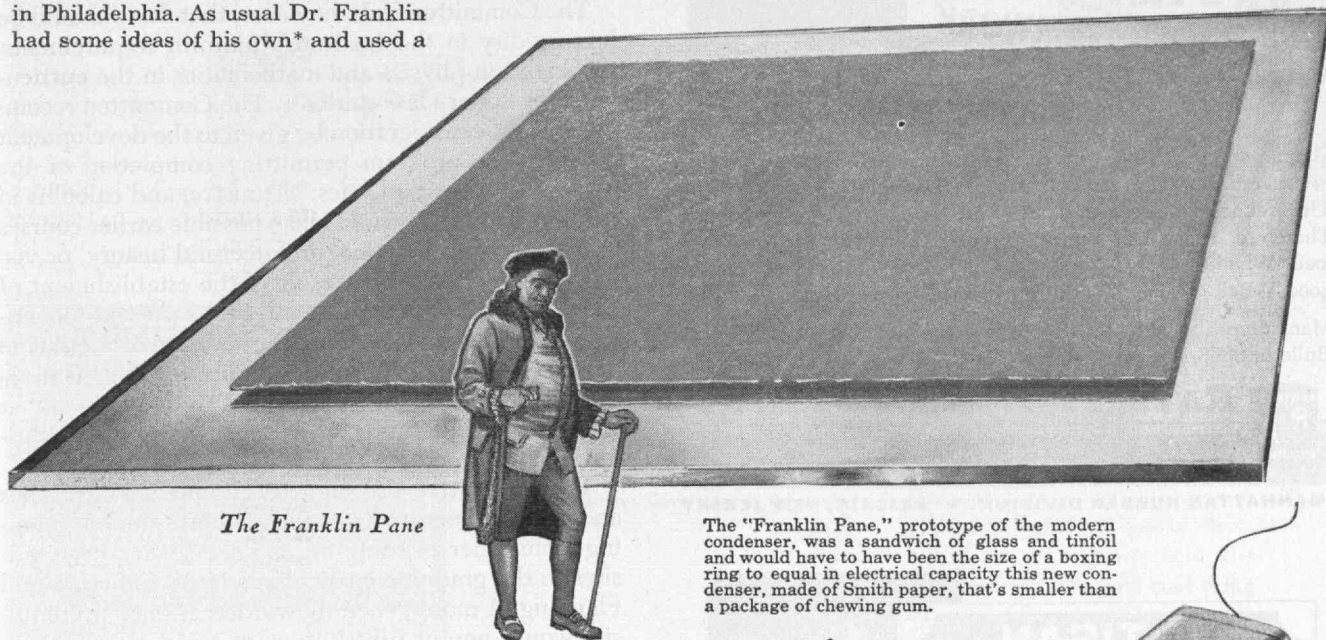
Between 1745 and 1750 divers Europeans were experimenting excitedly with The Leyden Jar. Dr. Priestly declared its discovery to be "the most surprising yet made in the whole business of electricity."

Early in 1747 Peter Collinson, fellow of the Royal Society, sent an "electrical tube" to his friend, Benjamin Franklin, in Philadelphia. As usual Dr. Franklin had some ideas of his own* and used a

Leyden Jar in his famous lightning-kite experiment. It was Franklin who identified the principle and improved on the jar with the simple "Franklin Pane," a piece of glass with tinfoil on each side. Today's condensers are practically piles of Franklin Panes.

*Puckish old Ben even made a "magic portrait" of the King out of metal on glass with a removable crown. When an uninstructed person attempted to remove the crown he received a "tremendous shock." This served as a warning for too ardent patriots.

That's better Dr. Franklin, but—



The Franklin Pane

The "Franklin Pane," prototype of the modern condenser, was a sandwich of glass and tinfoil and would have to have been the size of a boxing ring to equal in electrical capacity this new condenser, made of Smith paper, that's smaller than a package of chewing gum.

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It was Franklin who took the first step toward the modern condenser. The most recent step in its improvement has been taken by Smith Paper, Inc. of Lee, Mass.

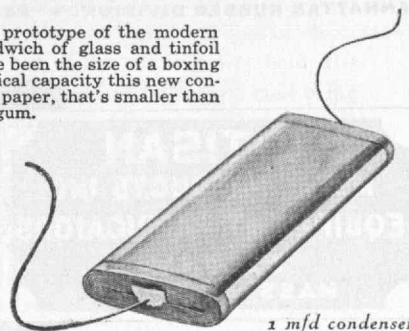
Smith has been making very thin papers for years — papers as thin as .00025 in. With the growth of electronics Smith's condenser paper became a product of considerable industrial importance.

An ordinary condenser is a roll of many alternate layers of conducting metal and non-conducting paper each of which, for compactness, should be as thin as possible. But there are limits to their thinness for should a momentary overload break through the insulator the condenser is short circuited and ruined.

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1 mfd condenser
Actual size

expectancy are great advantages to all makers of television and other electronic equipment.

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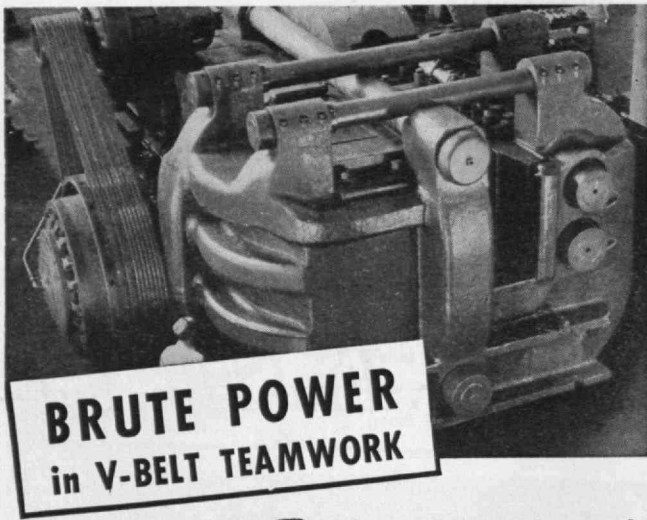
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The Committee believes there should be no effort to separate students in this School from the rest of the Institute body in the common freshman year. It does believe, however, that some modification of the freshman drawing course might be possible and desirable — not only to make it a better preparation for later work in this School, but also to increase the flexibility and usefulness of drawing as a tool for engineers and scientists.

The Committee feels, however, that there should be less rigidity in the Institute's uniform requirements, especially in physics and mathematics in the curriculums for upper-class students. The Committee recommends that consideration be given to the development of a science program permitting completion of the general courses in physics, chemistry, and calculus in the first year. This would make possible earlier courses in architectural drawing, architectural history, or visual design, which, as a result of the establishment of the common freshman year and of the present second-year requirements, are now pushed into a later stage of the curriculum than is desirable for a logical sequence of professional education. It is understood that this recommendation is now under study by the Administration.

The Committee also suggests elimination of physics and calculus requirements for graduate students coming from other institutions, as unnecessary prerequisites to the graduate curriculums in Architecture and Planning. A more generally worded science prerequisite would permit substitution, in some cases, of material more directly related to these fields, without compromising Institute standards.

The Committee lays considerable stress on the need to advance the professional courses mentioned above into the second year. It also considered the desirability of providing more background in architectural drawing for students of City Planning, especially those transferring from other institutions without training in graphic design and presentation.

Marine Engineering

At its last meeting, held at the Institute on April 25, 1949, members of the Visiting Committee on the Department of Naval Architecture and Marine Engineering* met with administrative and teaching staff of the Department, inspected the facilities of the Department, and took note of progress which had been made since its previous meeting in 1948.

The Corporation has determined to proceed with the construction of the Hydraulics Laboratory Building which will include a towing tank 106 feet long, 8 feet and 7 inches wide, and 4 feet deep. When completed the new Hydraulics Laboratory will make a

(Continued on page 46)

* Members of this Committee for 1948-1949 were: William S. Newell, '99, chairman, Ellis W. Brewster, '13, Roy W. Chamberlain, '31, Eugene P. Worthen, '32, Victor M. Cutter, Vice-Admiral Earle W. Mills, and John E. Slater.

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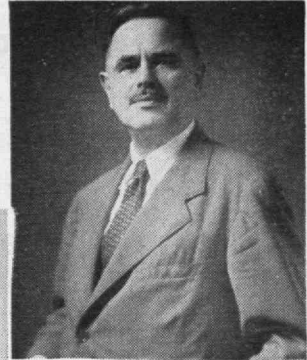
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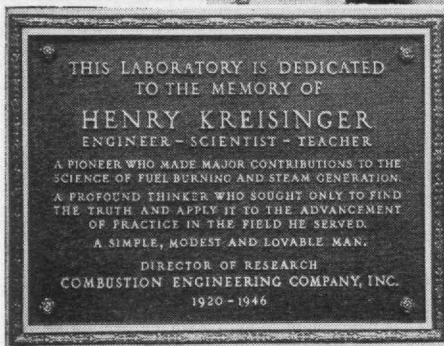
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own organization, but of the whole power field. His pioneering work in the field of pulverized coal firing and water-cooled furnace walls was an outstanding achievement that initiated the widespread use of pulverized coal in power stations throughout the world. This work was recognized in 1943 by his selection for the Percy Nicholls award, a joint award of the American Society of Mechanical Engineers and the American Institute of Mining Engineers for "notable scientific or industrial achievement in the field of solid fuels."

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THE INSTITUTE GAZETTE

(Continued from page 44)

substantial contribution to the research facilities of the Department. The Hart Nautical Museum has been completely rearranged, redecorated, and new lighting has been installed. A series of models showing the development of ocean-going sailing craft is quite complete, and the collection of naval craft is fair, but the group showing development of steamships is not satisfactory, nor are there any good models of modern merchant vessels except in very small sizes. Steps are in hand to correct these deficiencies, but limitations of space, funds, and staff make progress slow.

The most serious problem now confronting the Department is that of providing adequate drafting-room space for the growing body of graduate and undergraduate students. Some relief for such space problems is mandatory and the problem is under study by the Administration.

With the completion of the Hayden Memorial Library, certain departments of the Institute will move to the new building, making more space available in Building 5 for the Department. Space now occupied by the Dard Hunter Paper Museum is recommended for use as a drawing room for the Department of Naval Architecture and Marine Engineering.

The reassignment of the Pattern Shop to the Department and its redesignation as the Ship Model
(Continued on page 48)



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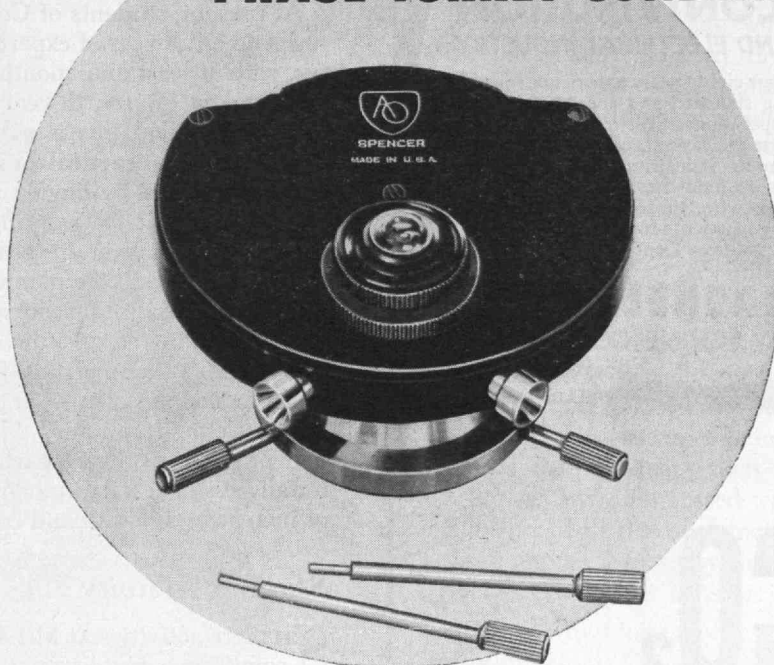


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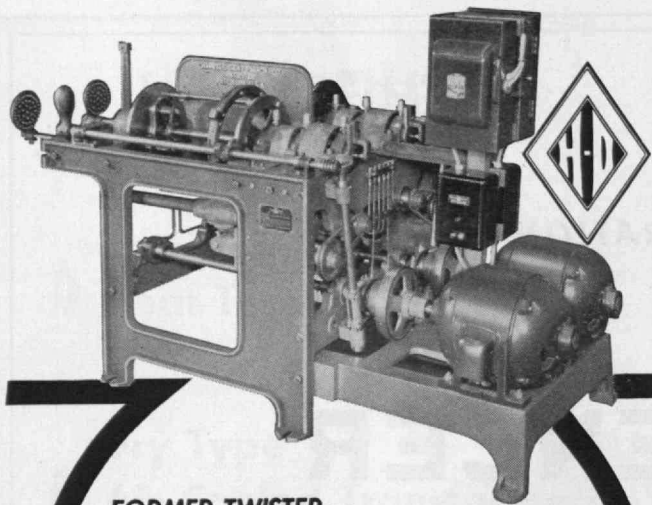
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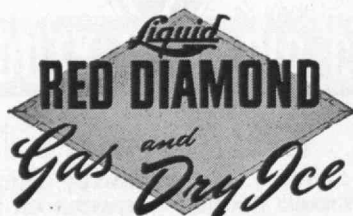
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THE INSTITUTE GAZETTE

(Continued from page 46)

Shop are viewed with favor by the Committee. This Shop forms an essential element in the towing-tank project and is an important one in the normal activities of the Department.

In response to the suggestion of Thomas K. Sherwood, '24, Dean of Engineering, the value of Course XIII-C was fully explored. It was the unanimous opinion of the Committee that there is a need for such a Course, and that it should be continued, if qualified staff to handle it can be maintained. The graduates of the Course are filling an increasingly important niche in the field of marine transportation on the basis of a curriculum unique in its composition.

At present, students of Course XIII-C are required to spend a full year of experience in the marine industry, with at least nine months spent at sea. Generally, this is taken as a fourth year in the Course. The Committee feels that this is more than is required, and that adequate practical observation and experience could be gained by having students spend two summer vacations at sea working on shipboard. Students can be placed in suitable sea billets for such practical summer work, and the plan would be agreeable to the industry. It would, of course, save a year in the student's training and give the Institute better control of the student's training time. The Committee therefore recommends this change in the curriculum.

The Committee found a healthy spirit and continued progress in the Department. The faculty is materially stronger than in the past, and the work done is of increasing breadth and competence.

Student Activity

STUDENT activities at M.I.T. are in a sound, healthy condition, according to the latest report of the Visiting Committee on Student Activity.* Following the disruption of the war period, all the significant activities have been re-established, and many have been added. Ninety-three separate activities are recognized formally by the undergraduate governing body, the Institute Committee.

Interest in student government has developed to a current postwar high point, and your Committee is favorably impressed with the caliber, enthusiasm, and competence of undergraduate administrators in the direction of student government affairs. The tradition of undergraduate responsibility for undergraduate matters seems firmly renewed.

A student Judicial Committee established last year, with jurisdiction in situations involving disciplinary problems, is another evidence of traditional M.I.T. policy of student responsibility. Last year M.I.T.'s Interfraternity Conference won the award of the National Interfraternity Conference as the "one in the United States which during the previous year had

(Concluded on page 50)

* Members of this Committee for 1948-1949 were: Raymond Stevens, '17, chairman, Henry E. Worcester, '97, H. W. McCurdy, '22, and J. Willard Hayden.

"The one field that offered exactly what we wanted"



Charles I. Lytle and family, Buffalo, N. Y.

DURING the years I was in the Army, I often thought of having a business of my own, and this was in the back of my mind when I returned to civilian life.

Before the war I had worked for a large paint company, and upon my discharge, I returned to them, serving as manager of one of their stores. But within a year I resigned, mainly because what I really wanted was a position where my income would be measured by my ability—not by what someone thought I was worth. And where I could exchange my energy and talents for good living conditions for my family, and for an unlimited opportunity for me to earn.

Some serious, long-range thinking brought me to the conclusion that the one field that offered exactly what I was after was life insurance. So I contacted a number of companies here in Buffalo, and spent several days studying their respective merits and histories. I was impressed with the caliber of New England Mutual men I met, and by the fact that this company had always led the field in providing liberal policyholder benefits.

That's why I joined New England Mutual. Now, after my Home Office training course, and with the valuable help of my General Agent and the many aids offered to New England representatives, I'm making steady progress. I've got that business of my own, and it's providing the opportunity for me and the good living conditions for my family that we've always wanted.

Charles I. Lytle

These Massachusetts Institute of Technology men are New England Mutual representatives:

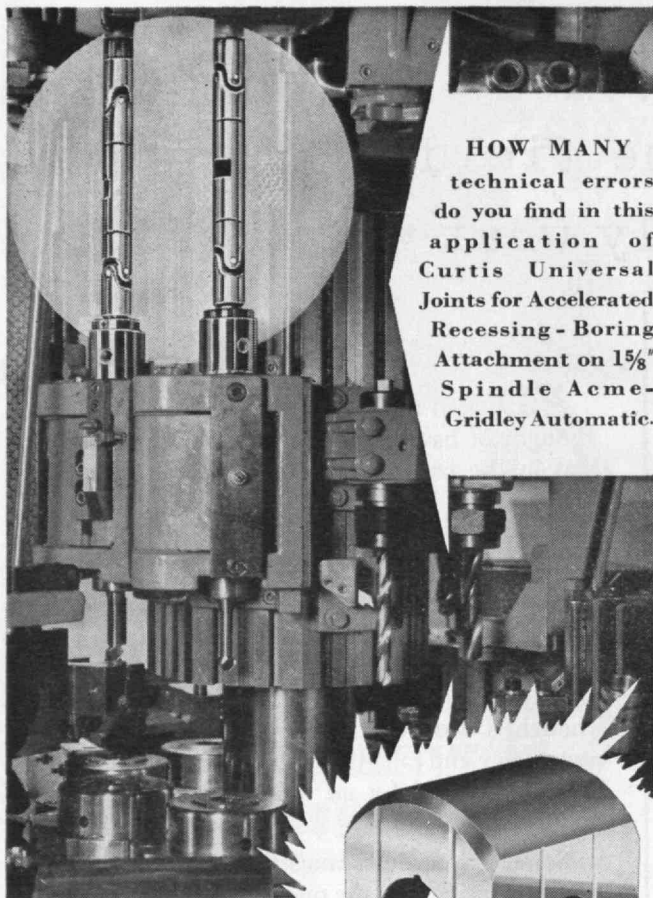
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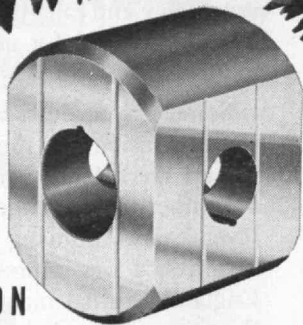
Recent graduates of our Home Office training course, although new to the life insurance business, earn average first-year commissions of \$3600—which, with renewal commissions added, brings the total yearly income average to \$5700. From here, incomes rise in direct proportion to each individual's ability and industry.

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THE INSTITUTE GAZETTE (Concluded from page 48)

made the most notable contribution to the social and educational program of the institution."

Since the Corporation recorded its interest in, and support of, adequate provision for student housing, recreational and extracurricular activity, notable progress has been made in improving the physical and social facilities available to the student outside the classroom and laboratory. An example is the recent appointment of a director of Dining and Housing Facilities, reporting to both the treasurer and to the dean of students. The director is expected to attack and improve that area of the student environment falling under his jurisdiction. There will always remain much to be done, however. It is apparent that administrative headquarters and general housing for student nonathletic activities are still inadequate. They should receive some relief with the opening of the Hayden Library and its humanities quarters. Facilities scheduled in the program of the Committee on Financing Development will find capacity demand the moment they can be made available.

Most serious is the fact that more than half of the undergraduate body lives off the campus. Many of the steps taken for improving student environment must be, and remain, an inadequate approximation of the ideal until the time comes when more adequate and more suitable campus housing is made available. In the meantime, your Committee is most favorably impressed with the progress being made within the facilities and funds at hand.

THE TREND OF AFFAIRS (Continued from page 22)

to withstand great extremes of temperature as well, but in any case the mechanical design of a rugged tube is strictly governed by the required electrical properties.

The Bureau's facilities for testing the ruggedness of electron tubes now include vibration apparatus, mechanical resonance testers, high-impact shock machines, and high-speed centrifuges. Some tests are conducted with typical electrical potentials applied to the tube elements so that noise modulation, short circuits, and other effects can easily be studied. Destructive field conditions can be reproduced through the proper choice of vibration, resonance, impact, and acceleration tests.

After receiving various ruggedness tests, tubes are examined for structural failures. X-rays are sometimes used to reveal the extent of structural changes without opening the tube envelope. Materials for certain tube elements are examined spectroscopically to determine their exact composition and to find impurities that might weaken the tube structure. This determination of the real causes of tube failure is an important part of the rugged tube program. Out of these studies

(Continued on page 52)

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THE TREND OF AFFAIRS

(Continued from page 50)

will come recommended specifications for materials best suited to particular ruggedization problems. In some cases new materials and new methods of fabrication must be developed to meet the unusual requirements of ruggedization.

The Principle of the Hollow Charge

THERE have recently appeared a number of peaceful, if spectacular, applications for one of the oddest effects known to the science of explosives. This is the hollow-charge principle, known in one form or another since 1792, but more popularly in this country as the Munroe effect (after Charles Edward Munroe, American chemist and educator, 1849-1938), and in Germany as the Newmann effect.

The phenomenon first attracted wide attention when the United States and Germany almost simultaneously began the use of rocket projectiles launched from recoilless guns known as bazookas. Although these projectiles were much slower than shells from orthodox antitank guns, their ability to penetrate armor was devastating. Actually the projectiles themselves did little penetrating and their velocity at impact was a quite minor factor in their success. Covering a cone-shaped hollow in the front of the charge was a thin metal liner, and as the relatively small amount of explosive detonated, the shock wave was

focused to move parallel to the axis of the cone, collapsing the metal liner into a molten jet that moved ahead at tremendous speed. Velocities for these jets of up to 30,000 feet per second have been reported—about 10 times that of a fast rifle bullet.

The action of this jet on steel has been compared to that of a water jet acting on soft mud. So high are the dynamic pressures associated with these extreme velocities, that the ultimate strength of a metal is relatively insignificant by comparison, and a mild steel stands up almost as well as a heat-treated alloy steel. In fact, one of the suggested applications is in creating, for short time intervals, the extremely high pressures useful for studying certain properties of materials. Pressures of over 3,000,000 pounds per square inch appear feasible.

Since the outstanding characteristic of the shaped charge is its ability to blast a deep hole of rather limited diameter, it has been tried in various mines as a substitute for drilling. The hole formed by the shaped explosive (which must be of the military types that give high order detonations) is then packed with standard mining explosives just as if it were a conventional drilled hole. Whether the process is generally economic remains to be demonstrated.

Another interesting application is in perforating oil well casings to open up the surrounding rock structures and increase the flow of oil. Explosives have been used before, but to drive more or less conventional projectiles through the steel walls and into the local strata. With the Munroe effect, the projectile can, of course, be dispensed with. In view of the lim-

(Concluded on page 54)

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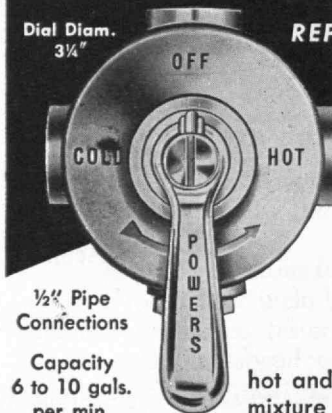
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THE TREND OF AFFAIRS

(Concluded from page 52)

ited room existing in a well casing, obtaining more penetration for the same amount of charge may be a matter of some importance.

The most recently reported application, however, is so close an analogy to military usage that one wonders whether the sword is being beaten into a plowshare or is being used to stir the forge as is. Shaped charges are being used experimentally to tap blast furnaces and open hearths. In the past, the tap holes, plugged with solidified metal, were opened by bar and sledge hammer, a hazardous manual operation. More recently, the oxygen lance has been used to burn through a hole at the time when tests showed the heat analysis to be correct or when it was time to pour for other reasons. Even with the oxygen lance, accidents can result if the tap opens more rapidly than expected, or blows out. Or it may take more time to get the metal flowing than expected, while the superintendent stands around fuming impatiently. With the shaped charges, an insulated tube about ten inches long, two and a half inches in diameter, and containing only about two ounces of explosive is mounted over the tap hole. When the proper moment arrives, the closing of a switch is followed immediately by a blast that punches a hole about three-eighths of an inch in diameter through a piece of cast iron up to eight inches thick.

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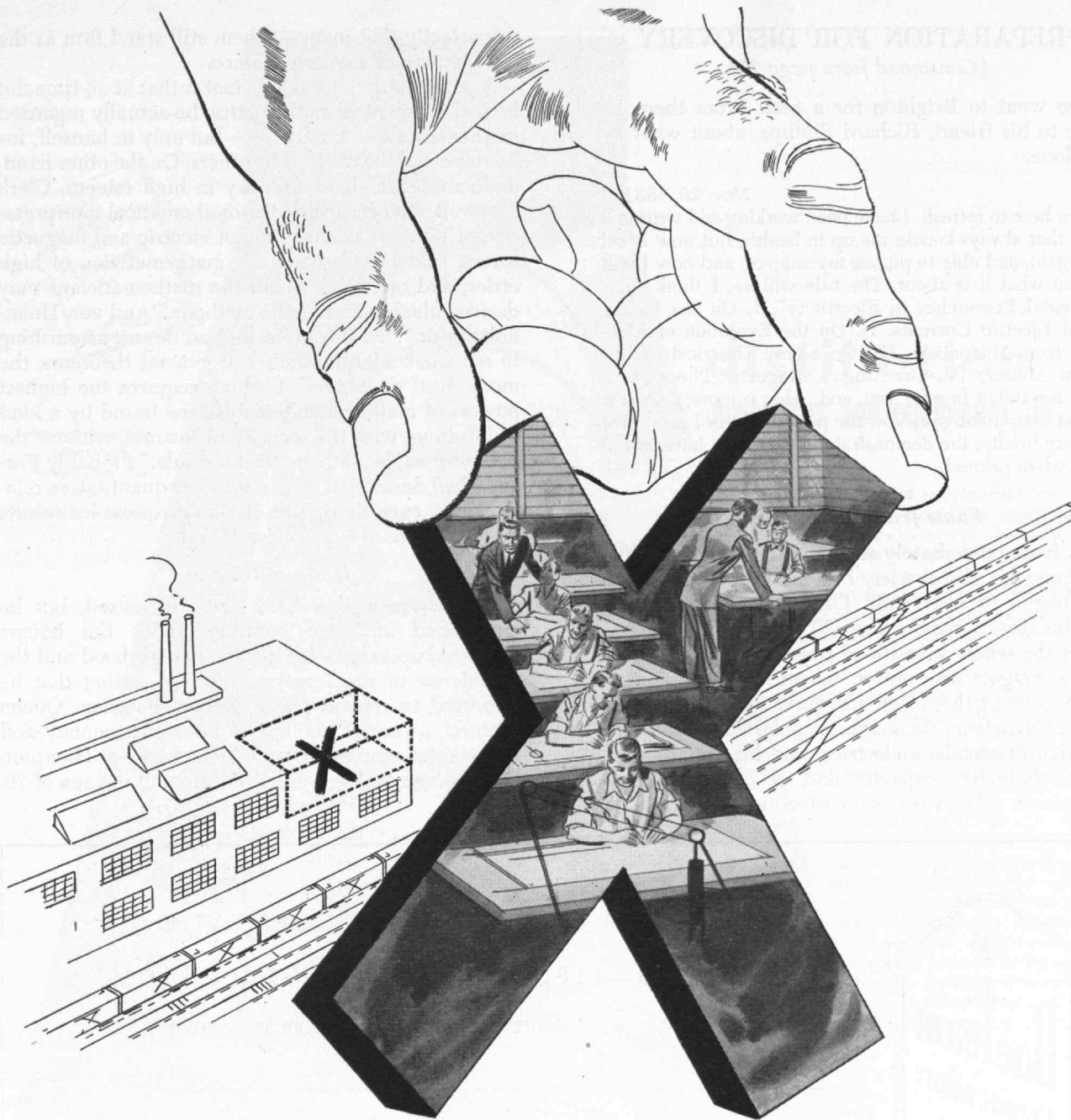
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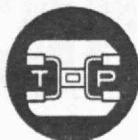
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PREPARATION FOR DISCOVERY

(Continued from page 25)

— then went to Brighton for a rest. From there he wrote to his friend, Richard Phillips, about what he had done.

Nov. 29, 1831

We are here to refresh. I have been working and writing a paper that always knocks me up in health, but now I feel well again, and able to pursue my subject; and now I will tell you what it is about. The title will be, I think, "Experimental Researches in Electricity"; I. On the Induction of Electric Currents; II. On the Evolution of Electricity from Magnetism; III. On a new Electrical Condition of Matter; IV. On Arago's Magnetic Phenomena. There is a bill of fare for you, and, what is more, I hope it will not disappoint you. Now the pith of all this I must give you very briefly; the demonstrations you shall have in the paper when printed.

Fame from Discoveries

His fame immediately soared. Kings and emperors acclaimed his discoveries, but his preparations had only begun to bear fruit. Discoveries flowed from his laboratory for more than 20 years. They covered almost the whole breadth of physical science — electricity, magnetism, optics, chemistry, metallurgy. Notable among them were his works in electrochemistry, diamagnetism, the magnetic polarization of light, corrosion of metals, dielectrics, and his definition of specific inductive capacity and of electrochemical equivalents. All his works were executed and described

so perfectly that many of them still stand firm as the foundations of modern science.

A particularly remarkable fact is that at no time did he feel the need of mathematics; he actually regarded mathematics as a hindrance — but only to himself, for he respected the use of it by others. On the other hand, mathematicians held Faraday in high esteem. Clerk Maxwell, who furnished the mathematical interpretation of Faraday's conception of electric and magnetic forces, said Faraday was: "a mathematician of high order, and one from whom the mathematicians may derive valuable and fertile methods." And von Helmholtz said: "... it is in the highest degree astonishing to see what a large number of general theorems, the methodical deduction of which requires the highest powers of mathematical analysis, he found by a kind of intuition, with the security of instinct, without the help of a single mathematical formula." Probably Faraday had developed a keen sense of quantitative relationships, even though he chose to express his results in a form free of symbolic notation.

Honors Bestowed

As the years passed, his fame increased, but he maintained an even humility under the honors showered upon him. He declined knighthood and the presidency of the Royal Institution, stating that he preferred to remain plain Michael Faraday. Queen Victoria, aware of his lack of interest in money and his need for retirement, gave him a house at Hampton Court where he lived in contentment to the age of 76.

(Concluded on page 58)



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GYROSCOPICS—ELECTRONICS—SERVOMECHANISMS

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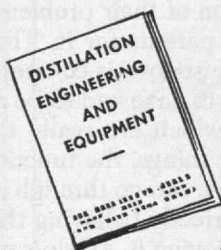
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PREPARATION FOR DISCOVERY

(Concluded from page 56)

When he died at Hampton Court on August 25, 1867, Faraday left a legacy of researches which laid the foundations for the great electrical age of today.

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FAMILY LIVING

(Continued from page 32)

us ask ourselves whether we are part of our children's problem, or whether we are a part of the solution. Children need help in the solution of their problems, and they normally look to their parents for it. They want parental co-operation, because love is co-operation, and security, and they want to have and to be all these differently named things which are really the same thing. It is, above all other things, the function of parents to provide that love. We can go through all the motions of loving a child, perfectly believing that we love it, without in fact really loving it. Love is not love, nor is love the exhibition of affection which is turned on and off as occasion requires. Love is a positive force and one which never fails. If you love anyone you cannot fail him. Don't talk about love. Be loving. Many of us are too offhand in our relations with our children. We don't have sufficient respect for them as persons, and instead of treating them as developing persons, we often behave toward them as if they were petrified forests of wrongdoing.

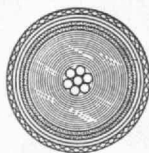
Human relationships are problems of adjustment, and that is the function which parents must serve to their children within the family. They must serve as adjusters who help their children to adjust and to adapt themselves to their problems. Where there is the desire to understand and to do this, a way will be found. Life itself is a continuous process of adjustment to changing conditions. And as some all-too-ex-

(Continued on page 60)

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| COX-3FS-014-GL | .014" cw. | .100" | 7.5 | 22.0 | 72 | Miniature |
| COX-3FS-016-GV | .016" cw. | .150" | 17. | 18.4 | 85 | |
| COX-2FS-22-RS | #22 str. | .170" | 22. | 30. | 50 | Small |
| COX-2FS-22-NL | #22 str. | .125" | 16. | 30. | 50 | diameter |
| COX-2FS-22-GV | #22 str. | .125" | 18. | 30. | 50 | flexible |
| COX-3FS-22-RS | #22 str. | .190" | 25. | 21. | 71 | cables |
| COX-3FS-026-GV | .026" cw. | .240" | 50. | 17. | 90 | Size of 59/U |
| COX-4FF-026-RS | .026" cw. | .250" | 45. | 14. | 88 | Equal to 62/U |
| COX-2FS-032-GV | #20 CAG | .195" | 35. | 28. | 60 | Size of 58/U |
| COX-2FS-20-RS | #20 str. | .195" | 30. | 37. | 57 | Equal to 58A/U |
| COX-2FS-20-GV | #20 str. | .165" | 35. | 36. | 52 | Equal to 58A/U |
| COX-1FS-16-GV | #16 st. AG | .185" | 38. | 46. | 25 | |
| COX-2FS-16-GV | #16 st. AG | .260" | 90. | 30. | 50 | Equal to 5A/U |
| COX-2FS-13-GV | #13 st. AG | .365" | 124. | 34. | 52 | RG-115/U |
| COX-2FS-12-GV | #12 st. AG | .425" | 140. | 30. | 52 | RG-87/U |
| COX-2FS-10-GV | #10 st. AG | .445" | 200. | 30. | 52 | RG-94/U |
| COX-2FS-5-GV | #5 st. AG | .710" | 475. | 30. | 52 | RG-93/U |

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FAMILY LIVING

(Continued from page 58)



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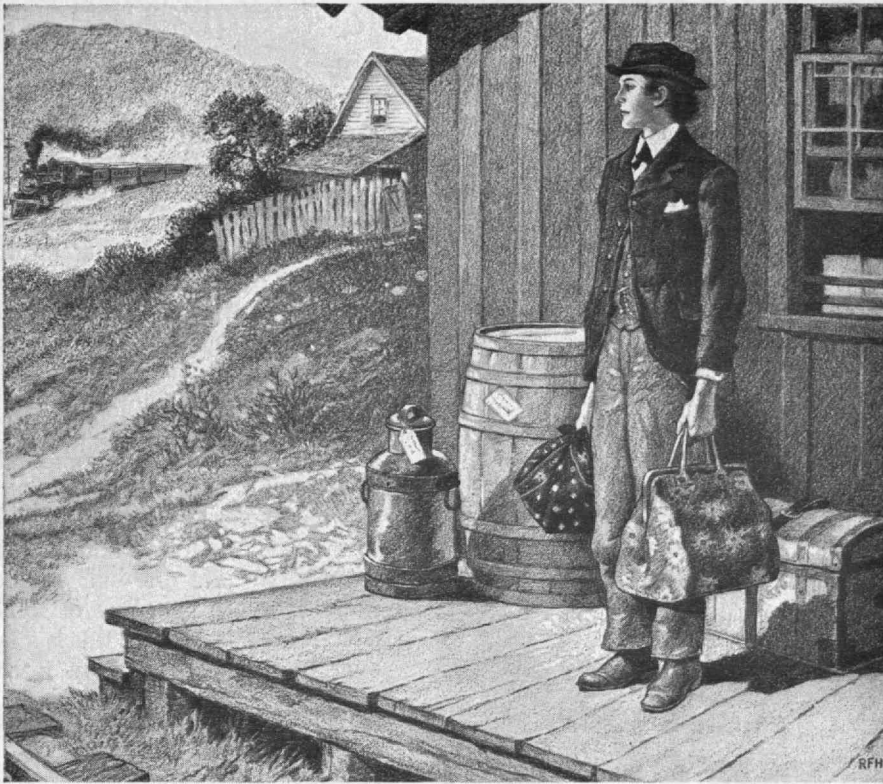
perienced human being once remarked: The process of living is like playing a solo in public the first time you pick up a violin; you have to learn the music and how to play the instrument all at the same time.

It is, I think, obvious that the best place in which to train young people for family living is within the family itself. But, it seems to me that the basic values for family living will have to be taught to potential parents outside the family, as well as within it. No risks however, should be taken. Society is responsible for the value system of the family, and society should make itself responsible for seeing that the values best calculated to secure a happy and loving family should be made part of the behavioral equipment of every member of society. The task is certainly one for each family to undertake, but I believe it should also be the principal task of our schools to inculcate these values.

Training for family living should start at birth with two parents adequately equipped to give that training — by loving their children. As a second step in the progress toward integrated family living, we might well revise our view of what we like to call education. In most of our schools education is, in fact, nothing more than instruction, which is a very different thing. We tend to regard education as completely specified and summed up in the three R's, reading, writing, and arithmetic. But we tend to neglect the most important of all the R's — human relations. The experience of the human race makes it perfectly clear that there is no education worthy of the name unless it be education in human relations. It must be the task of the school, in co-operation with the parents, to provide such education. This co-operative task should begin in the nursery school, which children attend during the period from three to five years of age. The nursery school should become part of the public instructional system of every community. It is here that the parents can begin to collaborate with the school teachers in the education of the young. In thus educating the young, each learns from the other, and each assists in the enterprise of creating a character to which nothing that is human can be alien.

Our schools must be reoriented in terms of human values, and those values must be taught in a positive manner, as a way of life for everyday living. In short, our schools must become institutes for training in human relations, and education in the three R's must be regarded as secondary to this, their primary purpose. In a negative sort of way our schools have always given training in human relations, not perhaps so much by what has been said as by what has been done in them. The attitudes of teachers reflect the values of the day, and these have inevitably been transmitted to the children. Unfortunately, many of these values belong to the market-place kind of living reflected in such works as *How to Win Friends and Influence People*. It is good and highly desirable to win friends and influence people but our aim should be to do so not because we have something to sell but because we have something to give.

By co-operating, from nursery school to high school,
(Concluded on page 62)



To young men of the mid-19th century desirous of a fruitful career, the great editor, Horace Greeley, gave the now-famous advice: "Go West!"

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FAMILY LIVING

(Concluded from page 60)

with the teachers in the education of their children in the principles and practice of human relations, and in the humanizing of the three R's, not only will the children be educated but their parents also will be assisted.

At the present time some schools have courses in Home Economics, Marriage, and Family Living. At best these are but casual improvisations. What we mean to convey by such courses should be taught throughout the school life of the child. The time to begin teaching family living is in the nursery school, not in high school or college. In the later age grades, intensive courses should be given in which there are brought together, in an effective manner, all that the prospective parent and spouse should know in order to achieve a happy fully integrated family. So much for the schools and the parents in relation to the creation of the integrated family. What of religion?

Fifty-two and one half per cent of the American population are members of some religious organization. It is believed that this is a larger proportion than ever before. Nevertheless, it has been obvious for some time that many of us have been coasting along on a somewhat perfunctory obeisance to the ideas of the Christian ethic without much conviction or will to transmit the full meaning of that ethic to our children. All of us are acquainted with the spiritually rudderless person of today who finds himself adrift in a sea of conflicting values, unable to steer a straight course. Religion is a way of life. As such it is best taught in the family, and the church will co-operate. The good life as laid down in the simple tenets of each great religion should be taught in the home, so that every child may be provided with that spiritual rudder which he will need in order to steer his course successfully in relation to his fellow men. The ultimate purpose of all religious teaching, as most great religious teachers have seen it, is the perfection of human character. In this, the schools, the church, and parents can each serve to complement each other's work.

If we will train our young people for family living by these means and toward these ends, we shall have trained them for living with their fellow men everywhere, in love, in peace, in good will, and in happiness. This is the challenge of the day. And it is no less a challenge than to be or not to be. It is up to us to take it up, to deliberately construct that future, for upon what we do now the future of mankind depends.

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GRADUATE STUDY AT M.I.T.

(Continued from page 29)

The significant volume of research being conducted under the leadership of members of our instructing staff provides a rich source of problems in which our graduate students may properly participate. The fact that financial support of these expensive researches is forthcoming from sponsors outside the Institute has, upon detailed examination, been found not to pose, per se, an educational problem.

The professorial research project supervisor is first of all an educator. In respect to graduate students assigned to particular problems incident to project research there is no educational problem as long as the supervisor keeps this primary obligation in mind. Projects come and go, but M.I.T. as an educational institution has permanence. Pride in maintaining its educational standards is present in its Faculty. These standards are not being sacrificed to expediency in prosecution of sponsored research which, after all, is an interesting and useful accessory, but nevertheless only an accessory, to our business of education.

Benefits of Team Research

Large, sponsored research projects are often most effectively prosecuted by teams of research workers. It is trite but true to point out that the day of the Ivory Tower and its isolated scientific or engineering occupant are characteristic of the past. Graduate students should be and are, whenever appropriate, encouraged to learn at first hand that in team research the end results are often greater than the sum of their individual parts.

How a student's thesis, when it arises from a team research, is to be evaluated in terms of the classical requirement that it demonstrate ability to conduct original research, is a pedagogical problem that merits and is receiving serious study. Perhaps new criteria will evolve to meet what already appears to be established as a changed situation.

There is no doubt that instruction of graduate students is attractive to a university instructor. Moreover, personal research activities are a satisfying part of a professor's career. No one will deny that such professorial activity contributes to the potentiality of more effective teaching. However, research is not the appropriate vocation of members of our Faculty. No one is ever appointed to the Faculty solely for research

(Continued on page 64)

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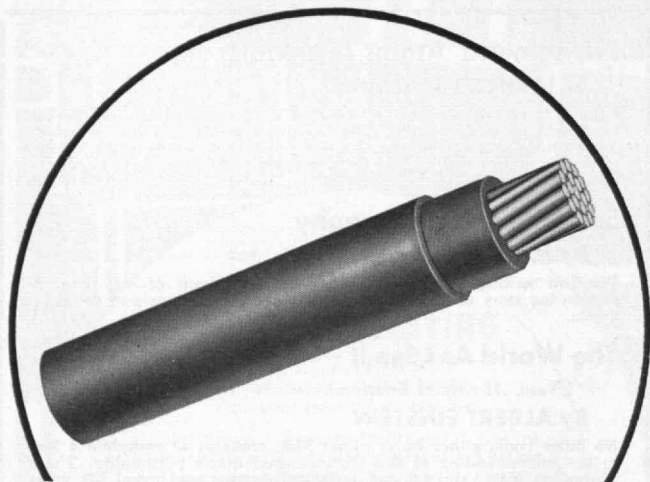
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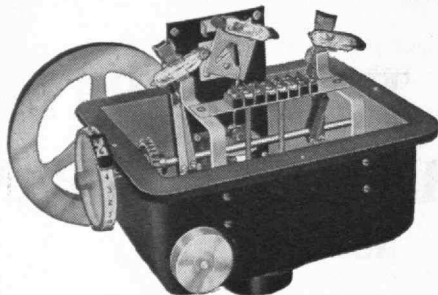
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GRADUATE STUDY AT M.I.T.

(Continued from page 63)

activity: teaching service is always the primary expectation at the Institute.

Because of the relative size of the Faculty and our current student body, it is necessary for effective educational service to employ staff aides in handling routine aspects of laboratory preparation, correction of papers, and in some cases, responsibility for sections. These aides to teaching service are recruited in part from the more advanced and able graduate students who may receive term appointments as academic staff assistants. In the School of Science, certain of these are designated as Teaching Fellows. This is not to be construed as signifying that undergraduate instruction is being turned over to graduate students because of professorial preoccupation with research and graduate instruction. The distribution of staff members handling Freshman recitation sections in April, 1948, as shown in Table II, supports this conclusion.

TABLE II

DISTRIBUTION IN ACADEMIC RANK OF STAFF
HANDLING FRESHMAN RECITATION SECTIONS IN 1948

| Academic Grade | Number of Sections | | | |
|---------------------|--------------------|---------|------------|--------------|
| | English | Physics | Chem-istry | Mathe-matics |
| Instructor | 13 | 7 | 0 | 18 |
| Research Associate* | 0 | 13 | 2 | 1 |
| Teaching Fellow† | 0 | 3 | 15 | 7 |

* Research Associates usually are candidates for a doctorate but are more mature than usual graduate students, often with extensive war-research experience.

† Teaching Fellows are half-time graduate students, usually doctoral candidates of proved attainments and an expressed interest in teaching.

Lectures in Chemistry 5.01 (general chemistry) were all handled by staff members of professorial rank; of 30 class sections, 12 were handled by professors, 2 by research associates, and 16 by teaching fellows. In Physics 8.01 (mechanics) all lectures were given by professors or instructors; recitation sections were assigned 10 to professors, 3 to instructors, 17 to research associates, and none to teaching fellows. In M11 and M12 (calculus), 6 sections were conducted by professors, 18 by instructors, and 6 by teaching fellows or assistants.

"A certain and not inconsiderable proportion of 'specials' will always constitute a desirable element in our body of students," wrote President Walker in his report for 1885. In 1948, more than 200 students were enrolled as Special Graduate Students (see Table I). These comprise a relatively small number who are pursuing studies elected to comprise an integrated program of study which does not conform to any stated degree requirements. Their objectives are judged to be sound and worth while. They are not would-be graduate students who could not make the grade. The majority are taking one subject at a time while in regular employment by the Division of Industrial Cooperation or outside agencies, and many are planning to later apply for regular graduate-student status.

(Concluded on page 66)

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GRADUATE STUDY AT M.I.T.

(Concluded from page 64)

To quote further from President Walker: "To say of all the students of an Institution, that on penalty of foregoing instruction entirely, they shall take the whole of any one . . . course . . . is to demand what is a sheer waste of time and strength . . . (for) that comparatively small class of young persons whose intellectual aptitudes are so pronounced and peculiar . . . that they, generally speaking, should take up only those studies for which they have a distinct taste or fitness." These observations are as true today as they were 64 years ago.

The Graduate School renders effective public service in furthering the education of a significant group of young men who enter professional fields better equipped to develop useful citizenship than they would have been without the training which they here have received. The most that can be expected from this effort is to encourage in the student the habits of study and the degree of erudition that are necessary components of a useful life. Lest we become unduly prideful of their performance as Alumni, it is well to be reminded of the observation of Lord Melbourne in a letter to Queen Victoria: "Be not oversolicitous re education. It may be able to do much, but it does not do so much as is expected from it. It may mould and direct the character, but it rarely alters it."

On the other hand, there is reassurance in the words of Edmund Burke that: "No men can act with effect who do not act in concert. No men can act in concert who do not act with confidence. No men can act with confidence who are not bound together by common opinion, common affection and common industry." The Faculty of M.I.T., of which the Graduate School is only a part, are thus bound together. There is reason for confidence that, in the Institute today, there are being established the traditions of the future.

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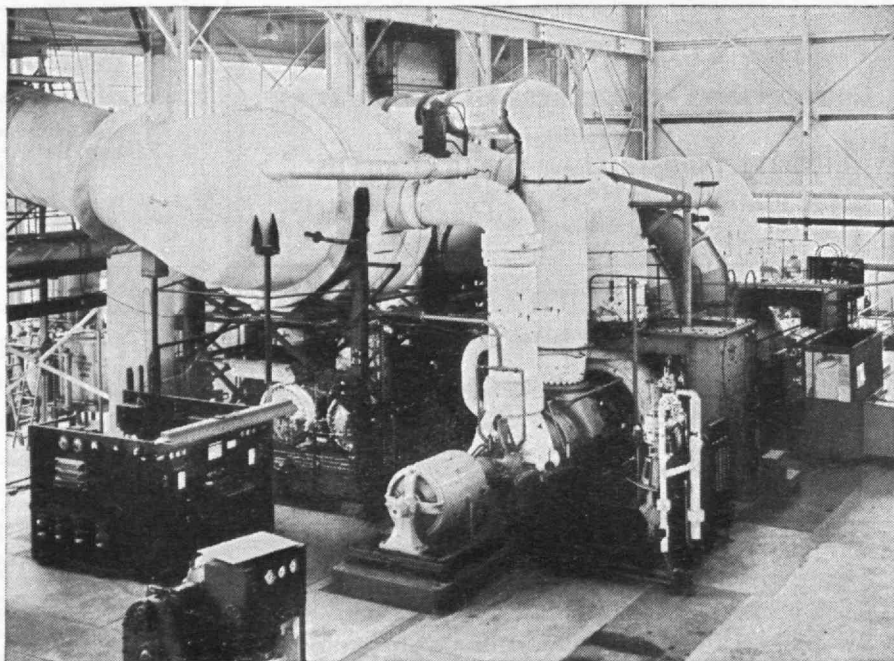
ALLIS-CHALMERS



Measuring cavitation resistance of various materials for pumps and hydraulic turbines. Material under test is electronically vibrated at a high rate while submerged in water.

Graduate Training Course, from the University of Nebraska. During my two years in the course, I spent a good deal of time on the test floor. That's the spot where original thinking, new designs, and new methods pay off in results. It's a great vantage-point from which to watch industrial development at work.

After completing my GTC, I worked as a test engineer... as development and sales engineer on steam turbines... as a chief engineer and department manager... and into my present work in research and development.



U. S. NAVY PHOTO

Experimental Gas Turbine at Annapolis is shown in new building to which it was recently moved. After extensive testing at progressively higher temperatures, the U. S. Navy unit has now been operated in several tests at its design temperature of 1500°F.

Alumni AND Officers IN THE News

Articles and Books

WILLIAM B. GIVEN, JR., '08, is the author of *Bottom-Up Management* published by Harper and Brothers, 1949.

IRVING FINEMAN '17 has written a new book entitled, *Ruth*. Harper and Brothers.

EDWARD ELLSBERG '20 penned *No Banners, No Bugles*, a book recently published by Dodd Mead and Company.

ROBERT P. RUSSELL '22 contributed "Revolution — The American Way" to the September, 1949, issue of *The American Magazine*.

ERNST A. GUILLEMIN '24 wrote "The Mathematics of Circuit Analysis" one of the books in the *Principles of Electrical Engineering Series* by members of the Staff of the Electrical Engineering Department at the Institute. John Wiley and Sons, Inc. 1949.

DENNISTOUN W. VERPLANCK '28, with M. Fishman and D. C. Beaumariage, contributed "An Analysis of Magnetic Amplifiers and Feedback" to the August, 1949, issue of the *Proceedings of the Institute of Radio Engineers*. For this same issue and again in collaboration with M. Fishman, Professor VerPlanck also wrote "An Analysis of Interlinked Electric and Magnetic Networks with Applications to Magnetic Amplifiers."

FREDERIC W. NORDSIEK '31 is the author of "How Processing Affects Nutritive Values of Grain Foods" which appeared in Volume 39, Number 6, of the *American Journal of Public Health*.

LEONARD MAUTNER '39, with coauthor R. C. Palmer, contributed "A Figure of Merit for the Transient Response of Video Amplifiers" to the September, 1949, issue of the *Proceedings of the Institute of Radio Engineers*.

IRVING PESKOE '39 is a coauthor of "Wire Tapping" which appeared in the June, 1949, issue of the *Miami Law Quarterly*.

FRANCIS B. HILDEBRAND '40 has written "Advanced Calculus for Engineers" published by Prentice-Hall, Inc. 1949. This book is in the *Prentice-Hall Mathematical Series*.

PEDRO ALBIN, JR., '47 wrote "Special Foundations Support Mexico City's Buildings on Highly Compressible Clay" for the August, 1949, issue of *Civil Engineering*.

MATTHEW L. SANDS '48 and W. C. Elmore are the coauthors of "Electronics: Experimental Techniques," one of the

books in the *National Nuclear Energy Series*, Los Alamos Project, Division V, Volume 1. McGraw-Hill Book Company, Inc. 1949.

LEO L. BERANEK, Staff, is the author of *Acoustic Measurements*, a book recently published by John Wiley and Sons, Inc. Professor Beranek also penned two articles for the July, 1949, issue of the *Journal of the Acoustical Society of America*: "Acoustics in Comfort and Safety" and "Sound Transmission through Multiple Structures Containing Flexible Blankets."

GEORGE R. HARRISON, Staff, wrote "The Production of Diffraction Gratings," Parts I and II, which appeared in the June and July, 1949, issues, respectively, of the *Journal of the Optical Society of America*.

WAYNE B. NOTTINGHAM, Staff, contributed an article to the August, 1949, issue of the *Journal of the Optical Society of America* entitled, "A Survey of Present Methods Used to Determine the Optical Properties of Phosphors."

MILTON C. SHAW, Staff, and E. Fred Macks are coauthors of *Analysis and Lubrication of Bearings*. McGraw-Hill Book Company, Inc. 1949.

HARRY SOODAK, Staff, and Edward C. Campbell are the coauthors of *Elementary Pile Theory* published by John Wiley and Sons, Inc. 1949.

NORBERT WIENER, Staff, has written a new book, *Extrapolation, Interpolation, and Smoothing of Stationary Time Series with Engineering Application*. The Technology Press and John Wiley and Sons, Inc. 1949.

Honors and Awards

WILLIAM S. NEWELL '99, in a special ceremony conducted at the office of the French Consul in Boston, received the Cross of Chevalier de la Legion d'Honneur on May 10.

GEORGE C. KENNEY '11 and JEROME C. HUNSAKER '12 were the recipients of the Legion of Honor, ranks of commander and officer, respectively, at a ceremony conducted at the French Embassy on June 14.

EGBERT C. HADLEY '14 was presented on June 6 with the honorary degree of doctor of engineering from Norwich University.

The firm of Isidor Richmond and Carney Goldberg, classes of 1916 and 1928, respectively, was the 1949 winner of the Harlston Parker Medal for its Southern

Brookline Community Center, Temple Emeth, located in Brookline, Mass. This award was made by the Boston Society of Architects.

EDWARD P. WARNER '17 has been elected to receive the Daniel Guggenheim medal and certificate for 1950 for "pioneering in research and a continuous record of contributions to the art and science of aeronautics."

FLEMMON P. HALL '21 was one of two recipients of the Ross Coffin Purdy awards given by the American Ceramic Society at their 51st annual meeting. The awards were made for outstanding contributions to ceramic literature.

DAVID J. ABRAHAMS '22 was highly commended by the Boston Society of Architects in June for his design of a Stop and Shop Supermarket in Cambridge, Mass. Mr. Abrahams' design was chosen by the Society's jury as one of the three best postwar examples of architecture originating from the offices of Greater Boston architects.

EDWIN D. MARTIN '22 has been awarded the American Iron and Steel Institute medal for his paper on "continuous strip pickling" which was delivered at the 1948 meeting of the Institute.

WILLIAM W. BUECHNER '35, HERMAN FESHBACH '42, ANTHONY SPERDUTO '42, ERNEST A. BURRILL, JR., '43, ROBERT J. VAN DE GRAAFF, Staff, and L. R. McIntosh were awarded the Charles B. Dudley Medal for their paper on "An Investigation of Radiography in the Range from 0.5 to 2.5 Million Volts." This award was made in June at the 52d annual meeting of the American Society for Testing Materials.

EVERETT M. BAKER, Staff, was honored at the Dartmouth College commencement exercises in June when the honorary doctorate of divinity was conferred upon him by that college. Dr. Baker delivered the baccalaureate address to the Dartmouth seniors.

RICHARD M. BISSELL, JR., Staff, received an honorary master of arts degree from Yale University on June 21.

JOHN W. M. BUNKER, Staff, received the honorary degree of doctor of science from Brown University on June 20. This honor came to Dean Bunker on the date of his 40th anniversary of graduation from the University.

GEORGE R. HARRISON, Staff, was awarded the Frederick Ives Medal for distinguished work in optics by the Optical

Society of America at the Society's annual meeting in October. Dr. Harrison has won wide recognition for his achievements in spectroscopy and studies of atomic structure. He has made especially notable contributions in the fields of spectral lines intensities, photometry and vacuum spectroscopy. Through his long experience in research and a broad understanding of the potentialities of scientific research in the advancement of mankind, Dr. Harrison has become a leader in applying advances in modern physics to industrial development.

Elections and Appointments

BRADLEY DEWEY'09 has been elected a trustee of the American Optical Company.

GEORGE E. WHITWELL'14 was elected a member of the board of directors of the Chamber of Commerce of the United States representing the second election district, which includes New York, Pennsylvania, New Jersey and Delaware.

LAUREN B. HITCHCOCK'20 was named director of research and development for the National Dairy Products Corporation and president of its subsidiary, the National Dairy Research Laboratories, Inc.

JOHN J. HEALY, JR., '21 was elected a member of the board of directors of the Merritt-Monsanto Corporation of Lockport, N.Y. Mr. Healy is currently serving as general chairman of the committee on arrangements for the American Institute of Chemical Engineers' regional meeting to be held in Boston in 1950.

JAMES R. KILLIAN, JR., '26 was one of four prominent civilian educators appointed to the Board of Visitors to the Air University, Maxwell Air Force Base, Montgomery, Ala. The appointment was announced by General Hoyt S. Vandenberg, Chief of Staff, United States Air Force, on September 10. Raymond B. Allen, Lee A. DuBridge and William S. Carlson were also appointed to the Board which advises the commanding general of the Air University and reports on the character, quality and management of the United States Air Force education system for officers.

Papers and Talks

ERNEST H. HUNTRESS'20 presented an invited paper, "The Teaching of Organic Chemistry to Chemical Engineers," at the fall meeting of the New England section of the American Society for Engineering Education at Yale University on October 8.

WILLIAM H. ROBINSON, JR., '24 presented "Horizons Unlimited" at a meeting of the Electric Institute of Boston, Inc., the Hotel Statler, Boston, on October 4.

EUGENE HERZOG'27 delivered a paper entitled, "Resonant Grounding of Distribution Systems" at the Mid-West Power Conference, Chicago, Ill., in April.

ROBERT S. HARRIS'28 was in Mexico City on July 27 where he delivered a paper before the Instituto Nacional de Nutriologia. Professor Harris returned to Central America in September to deliver a paper on the composition of Central American foods at the Instituto de Nutricion de Central America y Panama in Guatemala City on September 15. Professor Harris has played a dominant role in establishing these two nutrition institutes.

ROBERT TATE'32 presented a paper entitled, "Reconversion of the Liner S.S. *Lurline*" at a session of the Society of Naval Architects and Marine Engineers held in San Francisco in May.

Obituary

GEORGE M. TOMPSON'73, July 12.
FRANK I. SHERMAN'77, August 15.
ALICE BALLARD CROSBY'79, July 31.
JOSEPH E. NUTE'85, September 15.*
FRANK C. SPINNEY'85, August 12.
CHARLES H. HERRICK'86, August 2.*
JULIAN A. CAMERON'87, April 11.*
BERTRAND R. T. COLLINS'88, March 3.*
EUGENE S. DANIELL'88, date unknown.*
JOHN W. LINZEE'88, date unknown.*
SANFORD E. THOMPSON'88, February 25.*
FRANK W. SMITH'89, date unknown.
HARRY M. GOODWIN'90, June 26.*
JOHN H. BIRKS'91, March 24.*
HENRY A. FISKE'91, July 24.*
CAREY CONGDON'92, July 20.*
HERBERT FORSYTH'92, June 1.*
JOHN D. HILLIARD'92, June 19.*
WARREN H. WOOFFINDALE'92, August 6.*
HARRY R. BATES'94, August 22.*
SIDNEY K. CLAPP'95, August 15.*
EDWARD P. HUTCHINSON'95, June 24.*
WILLIAM B. STORK'95, March 20.*
EUGENE G. DE BULLET'96, in 1948.*
WILLIAM A. HOLT'96, March 9, 1948.*
REGINALD NORRIS'96, June 22.*
HERBERT E. SMITH'96, August 7.*
BENJAMIN C. WILLIAMS'96, June 7.*
EDMUND S. MANSON, JR., '97, January 29.
FRANCIS B. RECORDS, JR., '97, May 17.*
ORIN CROOKER'98, February 18.
JOHN W. DODD'98, March 17.*
JOHN H. LAMBERT'98, September 10.*
SHIRLEY S. PHILBRICK'98, May 17.*
PHILIP RICHARDSON'98, April 9.*
HOWARD C. UNDERWOOD'98, June 5.*
BENJAMIN S. HANNA'99, in 1948.
BENJAMIN E. MORSE'99, August 6.*
WILLIAM C. PHALEN'99, May 27.*
KARL BURROUGHS'00, August 12.*
EDMUND H. DURGIN'00, March 18.*
CHARLES W. HODSDON'00, June 24.*
DANIEL S. JOHNSON'00, September 9.
FRANK R. WALKER'00, July 9.*
ROBERT R. M. CARPENTER'01, June 11.
GEORGE L. HARRIS'01, March 1.
THEODORE F. LANGE'01, September 8.
GUY C. PETERSON'01, September 17.*
LOUIS A. STADLER'01, September 16, 1948.
ARTHUR R. G. BOOTH'02, May 16.*
JOHN R. SCOTT'02, April 5.*
ALLEN D. WHIPPLE'02, June 30.*
ANDREW M. FAIRLEE'03, June 17.
HENRY H. FALES'03, June 4.
JAMES W. COBB'04, September 1, 1939.*
WILLIAM F. GOODWIN'04, December 5, 1948.*

HUBERT MERRYWEATHER'04, June 7.*
FREMONT N. TURGEON'04, in June.*
JOSEPH H. BROWN'05, June 6.*
CHARLES FIELD, 3d, '05, June 17.*
GEORGE C. FUNK'05, June 13.*
ROBERT S. GARDNER'05, October 10, 1948.*
H. LEWIS HARDY'05, June 14.*
GALT F. PARSONS'05, May 25.*
WILLIAM A. HARDY'06, July 10.*
JOHN E. SIMMONS'06, February 5.*
ISHWAR D. VARSHNEI'06, October 12, 1948.*
JAMES P. ALVEY'07, March 2.
LLEWELLYN D. DAVENPORT'07, October 16, 1948.*
THEODORE L. SMITH'07, June 16.*
HAROLD S. WONSON'07, July 22.*
FRANCIS M. BOND'08, June 2.*
LYNN S. GOODMAN'08, July 27.*
LOYD H. SUTTON'08, July 23.*
JOSE D. BALDWIN'10, March 17.
RALPH A. SMEAD'10, July 6.*
DONALD C. BAKEWELL'11, September 10.*
ERNEST M. SYMMES'11, June 15.*
CHARLES L. GABRIEL'12, September 24.
WILLIAM J. MOONEY'13, June 21.
BUTLER P. CRITTENDEN'14, June 16.*
MALCOLM C. MACKENZIE'14, March 31.*
EDMUND J. REARDON'14, April 20.*
THOMAS B. RICHEY'14, March 30.*
FREDERIC J. VAN ETEN'14, January 15, 1944.*
WARREN N. WATSON'14, December 9, 1948.*
CHARLES P. PUTNAM'15, May 22.*
PAUL W. WEYMOUTH'15, June 23.*
CHARLES S. MAKEPEACE'16, August 29.*
BENJAMIN P. BAKEWELL'17, April 25.*
CARL J. MALMFELDT'17, May 26.*
CLARENCE M. ELLIS'18, in November, 1948.
HAROUTUNE K. DAGHLIAN'20, in April, 1943.
NORMAN P. DANA'20, June 13.*
EDWARD M. CRAIG, JR., '21, June 9.*
HOWARD L. FACE'21, March 19.*
JAMES HAYS'21, September 14, 1948.*
RAYMOND L. PRESBREY'21, September 8.*
LAWRENCE L. WILLARD'21, July 28.*
ARTHUR M. CLARKE'22, January 19.*
GEORGE O. CLIFFORD'22, July 22.*
LITTLETON S. ROBERTS'22, in June, 1948.
RAYMOND R. STODDARD'22, June 16.*
LORAN J. ELLIS'23, June 30.*
A. F. FLOURNOY'23, December 17, 1948.*
J. HAROLD MUMPER'23, August 2.*
FRANK W. SMALLEY'24, August 24.
HORACE G. BURT'26, in 1928.
WESLEY M. WHITE'26, December 30, 1942.
ANDRES B. BORROMEO'27, date unknown.*
WALTER B. GRIFFIN'27, July 23.*
CARL G. ALVORD'28, in 1941.
EDWARD D. KILLIAN'29, July 8.
SANFORD A. MOSS, JR., '30, June 17.*
GEORGE A. KADELA'32, May 5, 1945.
FREDERIC F. HAYLEY'34, December 14, 1948.*
LESLIE A. SKINNER'34, May 15.
JOHN A. MILLER'35, September 10.
ALI H. MOHAMMAD'38, date unknown.
HENRY BREWER, JR., '40, August 14.
PETER L. SIBLEY'42, August 20.*
VINCENT A. DOLAN'48, July 26.
HENRY M. BERNHARDT, Staff, August 31.

*Mentioned in class notes.

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Buffalo

Officers for the coming year have been elected by the Club as follows: Gabe Hilton'15, President; Walter W. Bird'34, Vice-president; and Matthew N. Hayes'36, Secretary-Treasurer. Many members of the Club partook of Ros Pfohl's '17) hospitality at the summer outing held on Grand Island, N.Y., on August 20. Ros's home fronts the Niagara River and the outing was held on the beach. Swimming, cards, watching boat races, and a hearty supper cooked on the beach were the order of the day.

Among those present were: J. Morton Briggs'21, Howard E. Britton'38, Henry F. Daley, Jr.'47, Richard E. Dow'01, Joseph M. Engel'37, Harry A. Ferullo'40, Nelson M. Fuller'23, Lewis H. Geyer'43, C. Mallory Graves'36, Carl K. Harshbarger, Jr.'48, Anton E. Hittl'36, Vladimir Hwoschinsky'40, Howard J. Jansen'47, Hugo C. Johnson, Jr.'46, Alan W. Ker'47, Robert E. Latimer'46, Bill Mahlman'48, Harold D. Mitchell'12, James B. Neal'15, James F. Patterson'36, Joseph R. Ryan'31, Carmon J. Sciandra'47, Walter H. Sherry'37, Arno W. Van Abs'48, and John T. Walsh'15. — MATTHEW N. HAYES'36, Secretary, 45 Manchester Place, Buffalo 13, N.Y.

M.I.T. Club of Central Florida

Our fall dinner meeting at the University Club in Tampa on September 14 was attended by 20 members. The Club was happy to have as its guest and speaker, C. L. Houk of Jacksonville, district manager of Dun and Bradstreet, Inc. In his talk, Mr. Houk pointed out the dependence of today's mass production and specialized business on credit. He then went on to explain the ways and means employed by Dun and Bradstreet, Inc., in accomplishing the gigantic task of furnishing and publishing accurate credit information for 2,850,000 businesses. Other guests were A. L. Bailey, Jr., of Dun and Bradstreet, Inc., Tampa office and Richard C. Mayer, guest of David H. Hayden'99. Plans for the next meeting early in December were discussed. At that time we expect to have a representative from the Institute with us. Informal discussions were enjoyed by all before and after the meeting.

Those present were: Arville C. Redman'00, Franklin O. Adams'07, Walter M. Ruby'12, James J. R. Bristow'14, William H. Gabeler'15, Laurence P. Geer'15, Malcolm R. McKinley'19, Archibald H. Kinghorn, Jr.'20, John H. Fessenden, Jr.'22, William W. Upham'23, Philip B. Stovin'25, Willard B. Simonds'34, Leo C. Mc-

Evoy, Jr.'38, Harold J. McGillivray'38, Frank W. De Felice'40, Jacques B. Skinner'45. — BEN L. SKINNER'42, Secretary, Post Office Box 157, Dunedin, Fla.

M.I.T. Club of Chicago

The Club held its last meeting of the 1948-1949 season with an election luncheon at the University Club on June 14. President Herb Kochs'24, presided and opened the meeting by giving a brief resumé covering the highlights of the meetings and speakers who made up the 1948-1949 program. President Kochs expressed his appreciation for the assistance of the various meeting and dinner chairmen who helped make possible such worthwhile programs. Treasurer Meyer reported that the Club had 371 dues-paid active members which was better than a 25 per cent increase over the previous year. We hope that next year will see an even greater number taking an active interest in the Club and attending the various club activities. Following this report, President Kochs recommended that a portion of the surplus funds in the club treasury be put to work in supplementing the M.I.T. Club of Chicago Scholarship Fund of \$7,000 which was originally established by H. B. Harvey'05. There was considerable discussion on this matter and the subject of scholarships in general. The members present finally voted unanimously to contribute \$750 from club funds to the club scholarship fund.

President Kochs then called on P. F. Lavedan'20, chairman of the nominating committee for his report. L. H. G. Bouscaren'04 and Frank Foley'20 assisted Pete in establishing the following slate of officers who were unanimously elected: President: John W. Barriger, 3d'21, who is president of the Chicago, Indianapolis and Louisville Railroad, more commonly known as the Monon, was last year's vice-president of the Club; Immediate Past President: Herb W. Kochs'24, President of the Club this past year and chairman of the board of directors of the Diversey Corporation; Vice-President: Stanley M. Humphrey'28, a former secretary and club director, Stan is a partner in Booz, Allen and Hamilton; Secretary: Ben H. Sherman'19, a partner in the firm of Charles W. Hills, patent attorneys; Treasurer: John G. Praetz, Jr.'28, former secretary of the Club and director of service and parts sales for the Liquid Carbonic Corporation; Directors: To replace Ed Farrand'21 whose term expires this year, Louis A. Metz'23, Vice-president of Ceco Steel Products Corporation; to replace Robert E. Wilson'16, F. Richard Meyer, 3d'42, 1211 Monroe Avenue, River Forest, Ill.; to replace S. M. Humphrey'28, who was nominated for the vice-presidency, George E. Wallis'09, President and General Manager of the Creamery Packing Company.

John Barriger was then called on by retiring President Kochs and expressed thanks to the membership for the honor of being the next president of the Club. John promised to follow the fine precedent set up by the previous presidents in arranging a series of meetings for the 1949-1950 program which will bring to our Club speakers of national import to make each meeting warrant the attendance of a maximum number of Alumni. — We nominate as the man of the month Lonsdale Green'87 who was the first to pay his dues for the coming year. Many thanks Lonsdale Green in behalf of the Club and the new treasurer. You certainly set all of us a fine example. Lon never misses a club meeting when he is in town. We wish him many happy healthy years to come.

The Executive Club of Chicago was host at a luncheon on May 13 to Dr. Compton who came from Washington to discuss the organization and functions of the Research and Development Board of the National Military Establishment. Our Club was signally honored by virtually all the officers and directors of the Club having been invited to sit at the head table. Just prior to Dr. Compton's talk, the Executive Club President introduced each member of the M.I.T. Club.

Carl T. Dunn'15, Vice-president of the Albert Ramond Associates, Inc., industrial management consultants, was chosen as arbitrator in the recent labor difficulties in Ford's Detroit plants. Carl's reputation as a successful arbitrator in such matters is becoming very widely known. — The local press recently carried a news release regarding a special public exhibition of the work of Skidmore, Owings, and Merrill, architect-engineers, which was on display at the art gallery of the University of Illinois at Navy Pier. Large scale photographs showing the Oak Ridge atomic city project, oil company towns built in Venezuela and Sumatra and plans for the United Nations center in New York were displayed. Congratulations to our alumnus, John O. Merrill'19 on the special recognition of this outstanding work. We understand this organization boasts several other M.I.T. men.

Congratulations and best wishes to Bud Meissner'43 who has become associated with his dad in Meissner Engineers, Inc., prominent consulting engineers in bulk material handling. Congratulations to J. Charles Forman of Oak Park who has been awarded an \$800 Technology scholarship. He was to enter M.I.T. in September as a chemical engineering student. — Sherry O'Brien'17 has recovered and is now back in business after his "sojourn" at Chicago's Wesley Memorial Hospital where he underwent an operation for a shoulder ailment.

Your club officers and honorary secretaries had the pleasure of a special get-together with George Dandrow'22, former Alumni President, and H. E. Lobdell'17,

Executive Vice-president of the Alumni Association, on May 16 at the University Club. Matters of general interest regarding the Institute and work of the honorary secretaries were discussed at the meeting.

Welcome to Phillip Michael McGoohan, M.I.T. 19??, the new arrival on April 16 at the Phil McGoohan'35 residence in Lombard. A welcome to Mitchell Silverstein'49, III, who telephoned asking us to add him to our mailing list. Mitchell is with Silverstein and Pinsof, Inc.

It is with deep regret that we mention the death of Joseph H. Brown'05. Mr. Brown died on June 6 after a long illness.

On July 6, President Barriger called a luncheon meeting of the officers and directors at the Eastern Railroads' dining room at the Chicago Railroad Fair. At that meeting, it was agreed that we should put out a directory of the Club without any advertising. F. R. Meyer, 3d, '42 was appointed permanent dinner chairman for the coming year. — On July 15, President Barriger invited many of the officers and directors and members of the Club for luncheon in honor of Messrs. J. R. Killian, Jr., '26, H. E. Lobdell'17 and J. J. Snyder '44. After the luncheon the group made a quick trip through the fairgrounds under the skilled guidance of President Barriger. — BENJAMIN H. SHERMAN'19, *Secretary*, The Firm of Charles W. Hills, 1414 Monadnock Building, 53 West Jackson Boulevard, Chicago 4, Ill.

The M.I.T. Club of Lower Ontario

A dinner meeting of the Club was held on May 11 to welcome H. E. Lobdell'17, Executive Vice-president of the Alumni Association. The meeting was held in the Engineers' Club of Toronto and was attended by a large number of the Toronto alumni. Mr. Lobdell entertained the gathering in his usual interesting manner with a story of the fascinating events which have taken place or are about to happen at M.I.T. At the conclusion of his remarks, he showed some beautiful, colored films of the Institute.

Mr. Lobdell was a luncheon guest at the Faculty Union, Hart House, University of Toronto on the following Thursday. A small group, including the dean of engineering and vice-president of the University of Toronto Alumni Association, was present. — G. ROSS LORD'32, *Secretary*, Mechanical Engineering Department, University of Toronto, Toronto 5, Ont., Canada.

M.I.T. Club of Mexico

As a result of a flying visit to Mexico City early in 1948 by H. E. Lobdell'17, ("fondly" remembered as "somehow" connected with the Dean's office) present Executive Vice-president of the Alumni Association, M.I.T. men in Mexico City looked over the situation and decided to inject new life into the local alumni organization. So, several meetings were held with Jack Nevin'24 being chosen president. Shortly thereafter, arrangements were made with the local University Club to set aside a table for a weekly round-table, M.I.T. Club luncheon where members and Institute visitors to Mexico can

go every Thursday for lunch with the certainty of finding congenial company.

Early last winter, as a means of getting the members better acquainted, a week-end party was arranged at an attractive private club in San Miguel Regla, approximately a three hours' drive from Mexico City. There some 35 persons (members and their families) enjoyed three days of "living as you like." This excursion was so successful, another was planned for November.

And now, the Scribe has to report the main event; our supreme effort to put the Club on the map! Lobby had told us he might revisit Mexico early in 1949, if we made enough noise down here and there seemed to be something to visit. So, plans were laid to develop the original idea of Gonzalo Garita'16 for a graduate scholarship which he discussed with H. E. L. on his 1948 trip. Support of the United States Embassy was obtained through Ambassador Walter Thurston and Cultural Attaché Philip Raine — and before we knew it, we had something, and, also, Lobby would again drop down on Mexico City on March 1. Once informed of his itinerary, a schedule was worked out which included, as the main event the night after his arrival, a dinner party in his honor at the University Club. Of course, we counted on the presence of the Embassy's Cultural Attaché but we never dreamed that our activities would merit such whole-hearted sympathy from our Ambassador. When approached regarding the dinner, he enthusiastically said that not only would the Cultural Attaché attend, but that he himself would come. Furthermore, he arranged for full press coverage — our three important local papers carrying photos and articles — the resident correspondents of the world news services being advised.

The guests, besides Mr. Lobdell, were: Hon. Walter Thurston, United States Ambassador to Mexico; Mr. and Mrs. Philip Raine, United States Embassy Cultural Attaché; Mr. and Mrs. J. M. Ramirez Caraza, Director of the school of mechanical and electrical engineering of the National Polytechnic Institute; Mr. and Mrs. Alejandro Guillot, Director of the National Polytechnic Institute; Alberto Flores, Director, Faculty of Engineers, University of Mexico; Lionel S. Marks and daughter, editor-in-chief of Marks *Mechanical Engineers Handbook* and professor emeritus of Harvard; Mr. and Mrs. Henry Cain, President of Mexico City College; Mr. and Mrs. Carlos Contreras, Vice-president of the International Federation for Housing and Town Planning and a panel speaker at the M.I.T. Convocation; and numerous representatives of the local and international press.

President "Jack" presided and gave a short talk explaining our activities and future plans. Ambassador Thurston spoke briefly commending our organization and its scholarship idea stating that we can count on "100 per cent co-operation from the Embassy and from me." H. E. L. talked on his previous visit to Mexico and gave some interesting information on changes at M.I.T., mentioning the preparations which, at that very moment, were being pushed toward completion in Cam-

bridge and Boston for the Convocation, to culminate in the inauguration of Dr. Killian as the Institute's tenth president. Finally, Alejandro Guillot, Director of the National Polytechnic Institute, spoke expressing his appreciation and interest in the educational activity being sponsored by our group. It was unfortunate that one of our most active and enthusiastic members during our 1948 organization meetings was out of town; Dr. Manuel Sandoval Vallarta'21, Mexico's outstanding man of science and a former Technology faculty member.

Alumni attending this dinner were: Garnett A. Joslin'09, Manuel A. Hernandez'13, George D. Camp'16, Gonzalo Garita'16, Viviano Valdes'21, Fernando de la Macorra'23, Thomas M. Nevin'24, Clarence M. Cornish'24, Agustin M. Valdes'25, Richard W. Plummer'26, Harold T. Blackwood'28, Alfredo G. Gutierrez'30, Fernando M. Gallardo'35, Alvino Manzanilla'31, Lyman Chandler, Jr., '31, Rudolfo R. Rosas'33, Hippolyte Gerard'35, John P. Blegg'36, Hector M. Zurita'39, Arturo M. Morales'44, Rafael Laredo'44, Scipio de Kanter'44, Hector M. Orozco'45, Jose Felipe Pescador'45, Pedro Albin'47.

During the remainder of Lobby's stay, he was able to see some of the principal points of interest, touristically speaking, as well as to visit some of mining Mexico on a trip to Taxco with President "Jack," arranged by Harold T. Blackwood'28 of Eagle-Pitcher's Mexican operations. At the following Thursday's round table, which became Open House Day with ladies and visitors present, the attendance required two long tables instead of our customary round one. After lunch, the 40-minute film in colors, "M.I.T. in 1948" was shown in the Reading Room.

With these notes, the Scribe has completed his first assignment and feels that his head (and perhaps shoulders) can be withdrawn from the "dog house." Anyway, we *are* on the map and are here to stay. Those readers of these notes who come to Mexico City, please take special note; the Club has an informal round-table luncheon at the University Club, Paseo de la Reforma 150, every Thursday at 1:30 P.M., and we are always glad to welcome M.I.T. visitors. If you have ladies with you and they would like to come too, bring them along; they can probably stand the shop talk by now!

Since we established our round table, we have had the pleasure of welcoming the following visitors: Ramón F. Muñoz '09, President of the M.I.T. Club of Monterrey, Mexico; — P. F. Lavedan'20, former President of the M.I.T. Club of Chicago; Terrell Bartlett'06, of San Antonio, Texas; R. J. Saunders'39, of Amsterdam, N.Y.; Bernardo Elosua'23, of Monterrey, Mexico; and A. P. Moyano'28, formerly of Mexico City but for the past three years in the Philippines. — C. M. CORNISH'24, *Secretary*, Margaritas 139, Villa Obregon, D.F., Mexico.

M.I.T. Club of Milwaukee

The Club held its final meeting of the year on June 17 during a picnic dinner at the Fox Point Beach Club. During the short business meeting, a completely new

slate of officers was elected. Harold E. Koch'22 was elected president; Arthur G. Hall'25, vice-president; Emerson J. Van Patten'24, secretary; Chester E. Meyer'36, treasurer; Charles H. Klingler'20, Milwaukee director; and Carl J. Kohler'28, Fox River Valley director. President Koch described ways in which the club members could participate in the M.I.T. Development Program. A busy program is planned for the coming year. — CHARLES L. SOLLENBERGER'44, *Secretary*, 7260 West Center Street, Milwaukee 13, Wis.

New Haven County M.I.T. Club

The Club held its annual meeting on June 11 at the Pine Orchard Club, Floyd Buck's ('29) committee chairmen, consisting of Larry Grew'27, J. P. Ramsey'25, Morton Plant'31, Mrs. G. Vincent Maconi ('15), Haig Solakian'17 and Walter Wojtczak'37, arranged an afternoon and evening of activities. The outstanding athletes of the day were Cliff Lytle'37, Walter Wojtczak'37 and Vince Maconi '15, who won tennis and golf honors, respectively. Thanks to Ed Taft'13 and Mrs. Charles W. Vilas'30, the sea dogs among our members were able to enjoy themselves by cruising around the Thimble Islands and in Long Island Sound. Because someone was able to lure Charlie Smith'00 to Alumni Day in Cambridge, Hud Hastings'07 was able to take first honors as representative of the oldest class present. Your Secretary suspects skulduggery in this latter contest.

Al Redway'23, ballot clerk, announced the election of the following officers for the coming year: Frank B. Nettleton'27, President; Clifford Lytle'37, Vice-president; Carlton E. Miller'46, Treasurer; Albert P. Libbey'26, Secretary; Walter S. Wojtczak'37, Chairman-at-large.

The following Alumni signed the register: Stuart M. Boyd'18, Floyd W. Buck'29, J. Lawrence Tobey'36, Marshall Wellington'16, William W. Young, Jr.'29, Haig N. Solakian'17, Albert S. Redway'23, Stanley G. Timmerman, Jr.'45, B. R. Hubbard'25, A. Morton Plant'31, G. Vincent Maconi'15, Edgar W. Taft'13, John P. Ramsey'25, Forrest G. Purinton'15, George O. Schneller'40, Hudson B. Hastings'07, John H. Purinton'41, Fred E. Brooks, Jr.'31, Carlton E. Miller'46, Walter S. Wojtczak'37, Richard C. Maconi '44, Samuel Jacobson'31, Gerald B. Yudkin'27, Clifford A. Lytle'37, William W. Townner'38, Frank P. Nettleton'30, Ray D. Edwards, Jr.'39, Thurston S. Merriman'39, P. E. Harvey'28, Alan W. Crowell'25, John S. Holley'35, Walter R. Weeks'24, Lawrence B. Grew'27, Philip H. Dreissigacker'37, and Albert P. Libbey. Guests included: Ann Westaway; R. Cooper, and Mrs. Smith; and Lois M. Maconi. The majority of the Alumni attended with their wives. — ALBERT P. LIBBEY'26, *Secretary*, Box 238, Stony Creek, Conn.

The M.I.T. Club of New York

Alumni visiting New York City are invited to join our luncheon table group at the Club House at 115 East 40th Street.

Stop in for lunch and visit with your classmates in this area.

The best item of news from New York is the reduction of membership dues to ten dollars. Without even using a slide rule, the directors slashed the dues and tapped Harvey Kram'42 as chairman of the membership committee saying, "we need three times as many members, Harvey, let's go!" The membership committee is now being formed with a representative from every five-year group of classes. Bob Greenes'42, Steve Eppner'45 and Phil Herman'48 are already trying to interest younger Alumni.

In May the Club held a brief business meeting for the election of officers and revision of bylaws. President Sam Reynolds'22 announced the election of Sax Fletcher'18 as the incoming president, with Edwin Burdell'20, Joseph Barker'16, and Irving Jakobson'21 as vice-presidents. Lou Bruneau'38 and Tom Creamer'40 were re-elected treasurer and assistant treasurer. Pete Grant'35 was elected secretary. Dave Broudy'22, Duncan Linsley'22 and Harvey Kram'42 were elected directors for a three-year term. The main event of the evening was an excellent talk by Luis De Florez'11 describing progress in the field of visual and audio training devices.

On June 17 the annual golf tournament at the Scarsdale Golf Club drew 60 members and guests and both the former President and the Executive Vice-president of the M.I.T. Alumni Association, George Dandrow'22 and H. E. Lobdell '17. Larry Davis'22 won the President's Cup. Low Gross was taken by Hugh Shirley'22; 1st low net by Ralph Wilts'41; 2d low net by C. W. Perkins'22; 3d low net by Wick Eddy'26; and 4th low net by Bob Bonnar'27; Nathaniel Krass'18 and Walt Sherbrooke'20 also won special prizes. Sax Fletcher presided at the dinner and maintained sufficient order and decorum to surprise Lobby.

The fall Smoker was planned for November 2 at the Club House. On December 6 the annual dinner at the Hotel Biltmore is sure to draw its usual big turnout of Alumni in the New York Area. Larry Cumming'26, has an active program committee at work, as you can see.

Sam Reynolds'22 sends his regards to everyone from Niagara Falls. This summer our former President moved away from "the big city" to take over new responsibilities as sales manager of the Electrode division of the Great Lakes Carbon Corporation. — G. PETER GRANT, JR.'35, *Secretary*, Grant Photo Products, Inc., 401 Broadway, New York, N.Y.

M.I.T. Club of Northern California

The presence in San Francisco of M.I.T.'s new President, James R. Killian, Jr.'26, and popular Executive Vice-president of the Alumni Association, H. E. Lobdell'17, was the occasion for the gathering of 51 alumni members and guests at San Francisco's University Club located at the crossroad of the historic Powell Street and California Street cable cars. Due to short notice and to the informal nature of the meeting, the gather-

ing was limited to a luncheon with invitations being extended by telephone to weekly luncheon attendants and other active members known to be in "the City" at lunch time.

Local Alumni enjoyed the opportunity of meeting the new president and hearing a few words of greeting from him. Mr. Lobdell introduced Joseph J. Snyder of the Treasurer's Office at the Institute and promised to pay us a visit in the fall. In turn, he was promised a more formal gathering.

Business of meeting included the handing over of the reins of office by outgoing President, Henning Berg'15, to incoming President, Allen W. Horton, Jr., '36, formerly vice-president of the Club. Due to his active interest and participation in local alumni affairs and other alumni pursuits and being an honorary secretary of the Institute, the new president stood out as the "people's choice." In order that there might be something that would keep him in town awhile, the gay vagabond, William Thompson, was installed as the new "Veep."

The Alumni checked at the door were the following: George E. Atkins'04, George D. Whittle'08, Edward J. Riley '09, Walton G. Harrington'10, Henning J. Berg'15, Aubrey P. Ames'19, Barrett C. Hinds'22, Dwight F. Johns'22, Antonio S. Pitre'23, Richard L. Cheney'27, Ralph W. Hamilton'31, John H. Minnick'31, Gaynor H. Langsdorf'32, John G. Hayes '33, Joseph L. Seligman, Jr.'34, Bert O. Summers'34, Frank R. Hatch'35, Clyde K. Smith'35, William O. Thompson'35, William E. Abbott'36, Carl Engstrom'36, Allen W. Horton, Jr.'36, Fred W. Meyer '36, Winthrop A. Stiles, Jr.'36, Eric O. Moorehead'37, August H. Schilling'37, Allen M. Chambliss'39, David Brown'40, Robert G. Hall'40, Raymond E. Keyes'40, Lawrence C. McEwen, Jr.'40, Frederick F. Noonan'40, John D. Rittenhouse'40, Richard A. Lazarus'41, William J. Cassidy, Jr.'42, Roger F. Morse'42, John G. Muller'42, Charles B. Steele'42, Walter G. Wells'43, John B. Nelson'47, Stephen T. Davenport'48, Donald S. Floyd'48, and four guests brought by members.

Although the above mentioned meeting was held on July 26, the Club wishes to extend invitations to newcomers or visitors to join us in one of our regular informal luncheons held every Tuesday at noon at the New Delmonico Restaurant on Sutter Street between Grant and Stockton in San Francisco. — BERT O. SUMMERS'34, *Secretary*, in care of Erbentraut and Summers, 696 Pennsylvania Avenue, San Francisco, Calif. RAYMOND E. KEYES'40, *Assistant Secretary*, 3006 Colby Street, Berkeley, Calif.

M.I.T. Club of Northern New Jersey

This issue of The Review will appear within a week of the opening event of the 1949-1950 season for the Club. This will be a Smoker similar to the one that drew out so many new faces a year ago, and that proved to be the forerunner of three more interesting and successful meetings. Program Chairman Grover Paulsen'40,

and House Committee Chairman M. M. Manshel'22 are collaborating on the arrangements as to time, place and speaker, and the preliminary plans outlined to the board of governors early in September give promise of worthwhile evenings during January, March and May. The same financial arrangements that produced an operating profit of \$6.28 last year will be continued again: namely, the active and sustaining memberships at \$3 and \$10 with admissions to all comers at each event slightly above the members' rates. However, the board of governors believe that the Club's success is measured in large degree by the percentage of younger graduates who enjoy its functions and have, therefore, offered active membership without dues to all graduates of the Class of 1949 within the club territory. In addition, all members of this class were invited to be the guests of the Club at its first party.

Information cards included in the first mailing will form the basis for a new directory of Institute Alumni in Northern New Jersey, a publication last issued in 1946. Complete replies will assist A. P. Munning'22 in compiling this important and helpful document. The many changes of the last three years will make the new issue especially timely.

The appointment of former President Wally L. Wise, Jr., '34 to the scholarship committee finds an able and well-liked associate returning to active duty in club affairs. On the other hand, the impending retirement of Livingston P. Ferris'11 to the ancestral acres in Louisiana threatens to deprive us of the counsel and companionship of one of the staunchest Institute Alumni in our area. Welcome to the returning prodigal, and a much deserved "well done" to Livingston.

Each meeting last year brought an increased attendance, and the continuation of this trend means that more men will discover more lost friends from former days to expand the ever increasing circle. May we look forward to the necessity of sending the house committee scouting for a larger hall. — FLETCHER P. THORNTON, JR., '36, *Secretary*, 1 Primrose Place, Summit, N.J., Telephone Su 6-6935M.

M.I.T. Club of Philadelphia

By the time these notes appear in print, the club's opening meeting on October 20 will be history. It is not too soon, however, to reserve on your calendar the date of January 17, 1950, for the club's annual dinner meeting. Our guests will include, with their wives, Karl T. Connon, James R. Killian, Jr., '26 and Donald P. Severance'38 as representatives of the Institute. Alumni are cordially invited to attend with their wives.

The club's annual directory of members will go to press on November 15. If you haven't already assured your listing, please send the pertinent personal data and your dues (\$3) to the Secretary, promptly. For information about Alumni in the Philadelphia-Wilmington area, telephone Boulevard 0287. — SAMUEL K. McCauley'41, *Secretary*, 288 Conley Road, Upper Darby, Pa. *Assistant Secretaries*: WILEY F. CORL, JR., '39, Box 358, Bryn

Mawr, Pa.; WILLIAM H. PEIRCE'46, 532 East Mermaid Lane, Chestnut Hill, Philadelphia 18, Pa.

M.I.T. Club of St. Louis

The sole summer activity of the Club was the annual outing on July 23. The event was somewhat novel in that it featured a return to nursery school; an occasion brought about because the facilities we desired were found at a children's camp. These facilities included swimming, softball and badminton. No one went thirsty, regardless of his taste, and a picnic dinner was served just before dark. After dinner everyone gathered around Ellis Littmann's ('33) car for the attendance prize drawing; the prizes having been secured with the help of Alumni from various firms in the area. As some indication of the scope of the lottery, prizes were received from the American Fixture and Manufacturing Company, Bemis Bro. Bag Company, Dr. Pepper Bottling Company, Edison Brothers Stores, Inc., Melville B. Hall, Inc., Lambert Pharmacal Company, Mallinckrodt Chemical Works, Monsanto Chemical Company, Natkin and Company, Nixdorf-Krein Manufacturing Company, Olin Industries, Inc., Fayette R. Plumb Company, G. S. Robins and Company, Royal Bond, Inc., Shell Oil Company, and Alvin Siteman Construction Company, Inc.

We decided to repeat the practice initiated last year of inviting wives and lady guests. It seems they thought so much of the idea that to do otherwise would have been to court all sorts of disastrous consequences. We were also fortunate to have with us as guests of Delos G. Haynes'09 and Mrs. Haynes, a group of approximately 50 undergraduates who were undergoing R.O.T.C. training at Scott Field, Ill. In all, there were approximately 150 persons present including a contingent from Alton, Ill., local undergraduates and a Scott Field truck driver who had evidently heard about the character of an M.I.T. party.

We endeavored to keep a complete list of the Alumni who were able to attend. It is hoped that the list is complete but if not, then I apologize for any omissions. Those present included: Arthur W. Baker '26, Arthur R. Beckington'46, Roy E. Bockhorst'46, G. C. Bradshaw'24, Paul H. Buxton'16, James R. Casserly'43, Ju C. Chu'46, Ralph H. Crosby'29, Herbert C. DeStaebler'21, John J. Fahey'29, Lawrence B. Feagin'24, Edward A. Fulton '30, Alexander S. Giltinan'47, Melville B. Hall'08, Robert W. Hanpeter'48, W. T. Hayward'46, William F. Hecker'42, L. Walter Helmreich, Jr., '40, Homer V. Howes'20, Robert J. Joyce'28, Robert W. Keating'42, Milton Lief'37, Charles C. Litkins'19, Ellis C. Littmann'33, Thomas O. McNearney, Jr., '48, Franklin E. Mange '48, Kenneth A. Marshall'47, W. H. Matheson'36, Rollins H. Mayer'41, James J. Mazzoni'31, Alvin M. Mendle'39, Norman C. Michels'41, Irvin R. Mitchell'30, John Noyes, Jr., '38, James B. Pickel'46, William F. Saunders'19, Samuel J. Shure '28, Charles D. Small'38, Bradford R. Stetson'27, Lawrence E. Stewart'43, John D. Sweeney'33, John E. Taylor'46, Robert

L. Turner'20, Wesley W. Wedemeyer'30, Eugene S. Weil'21, and John S. Wood, Jr., '34. — JOHN E. TAYLOR'46, *Acting Secretary*, 818 Olive Street, St. Louis, Mo.

M.I.T. Club of Schenectady

After a summer well-filled with club activities, the new steering committee sat down on September 7 and laid out the tentative schedule for the 1949-1950 season as follows: Noon luncheon meetings in September, October, November, February, March, and June; evening meetings in April and May; and a dinner meeting in January. Each meeting will be held on or near the third Tuesday of each month. Serving on the committee for this season are Frank Brown'48, Gardner Ketchum'41, Ed Lawrence'47, Jim Robertson'47, Joe Quill'41, our club president, and Ivor Collins'41, secretary-treasurer.

The final meeting of last season was held at the Edison Club on the evening of June 7. Our speaker was Milan Fiske, Vice-chairman of the Schenectady chapter of the United World Federalists, who used a movie and an informative talk to make the case for the adoption of a world federal government. As a result of the interest shown in his presentation, the following resolution was drawn up and submitted to the membership: "Resolved, that it is the sense of the M.I.T. Club of Schenectady that it should be a fundamental objective of the foreign policy of the United States to support and strengthen the United Nations and to seek its development into a world federation open to all nations, with defined and limited powers adequate to preserve peace and prevent aggression, through the enactment, interpretation, and enforcement of law." Voting to date is as follows: In favor, 22; not in favor, 5; not in favor because of the opinion that political activity is outside the scope and purpose of the Club, 5.

Alumni present at the meeting, many accompanied by their wives, were: A. Vogel'13, P. M. Currier'14, C. F. Barrett, Jr., '34, D. C. Jackson, 3d, '40, I. W. Collins'41, J. S. Quill'41, R. H. Simon'41, R. W. Stanhouse'41, R. W. Austin'42, David Jealous'44, W. B. Rodeman'44, A. M. Varner'47, M. L. Vogel'47, and Francis Brown, Jr., '48.

The education committee, now under the chairmanship of Hal Chestnut'39, Ben Thorn'41 (previous chairman) having been transferred to New York for a position in the International General Electric Company, has met regularly during the summer and has interviewed the mayor, the city manager, various city councilmen, and has talked to various groups, all with the idea of promoting the cause of the new high school for the city. In addition, a radio broadcast was made jointly with the local Parent Teachers' Association Council committee which has studied the program, and, at the open hearing before the City Planning Commission, our committee made known its stand. A special meeting to inform club members of the progress being made by the committee was held on July 25, with the following attending: J. B. Taylor'97, A. Vogel

'13, E. H. Bancker'18, G. T. Bevan'31, C. F. Barrett, Jr.'34, Harold Chestnut'39, I. W. Collins'41, J. S. Quill'41, R. W. Stanhouse'41, W. B. Rodeman'44, and J. T. Harvell'47.

In addition to Ben Thorn, the Club has lost Bob Brown'43 to the West Coast and North American Aviation, and Milt Vogel'47 to Israel, where he expects to set up his home. Our best wishes for success go with these men in their new ventures.

W. C. Hahn'23, research associate in electronics at the Knolls Research Laboratory of the General Electric Company and a resident of this area for the past 18 years, died on September 11. Our deepest sympathy is extended to Mrs. Hahn and her daughter. — IVOR W. COLLINS'41, *Secretary*, General Electric Company, Building 273 E-212, Schenectady 5, New York.

M.I.T. Club of South Florida

Our Club and its guests closed the season on June 9 by feasting on filet mignon at the Opa Locka Naval Officers Club and then enjoying a fascinating, informative talk by Arthur L. Stahl, director of food research at the University of Miami. Dr. Stahl, who has engaged in food research for more than 20 years, spoke on "New Uses and Means of Preservation of Tropical and Sub-Tropical Fruits." Clearly, our speaker is one who loves his work. His eyes lighted up as he described the potentialities of the tropics. According to him, the Caribbean area could produce enough food to feed the entire world. Unfortunately, this area is backward in agricultural development, and, in addition, sees many tons of food destroyed annually because of lack of facilities for preservation. Florida alone could easily provide the Vitamin C (ascorbic acid) needs of the entire country. In addition to the well-known orange, lemon, grapefruit, and lime, there are found in this state the avocado, Barbados cherry, carambola, Carissa, Ceylon gooseberry, guava, jujube, litchi, loquat, mango, papaya, sapote, and sapodilla, all of which are abundant in Vitamin C.

Professor Stahl displayed samples of many of the named tropical fruits. He then described some methods under consideration whereby the choice fruits might best be preserved, and the substandard fruits utilized in purees, compotes, jellies, punches, and the like. A desirable method of preservation is by the use of wrappers. Much research has been directed toward the development of transparent waterproof coverings which will serve as enzyme inhibitors and prevent or retard spoilage. Dr. Stahl showed us several of the many hundreds of such wrappers that are now undergoing extensive tests. Some of the more promising items are rubber hydrochloride, vinylite, and pliofilm. In response to questions, the speaker stated that he did not favor wax dips, because paraffin base waxes will not allow the fruit to breathe. Freezing, however, looks most encouraging and should enjoy widespread use in the future. Peas, potatoes, and mangoes, even of the offgrade varieties, freeze very well.

After the talk we all sampled Dr. Stahl's

preparations, including purees made of Barbados cherries, waste avocados and mangoes, and other of the fruits previously mentioned. It was unanimously agreed that both the talk and the food were excellent. We were all invited to inspect the new University of Miami food laboratories located at the old Richmond Naval Station, south of Miami. There, more than 2,000 acres of good soil are being utilized for the research program, and will shortly serve as the site for a new course in food technology to be offered by the university.

Members present included, in order of class year: Charles W. Swift'99, Frederick S. Anderson'04, Frank D. Webster'05, Henry G. Dooley'20, Fred E. Zurwelle'20, Edward Mandell'21, Clarence P. Thayer'23, Cecil G. Young'23, Thomas P. Coogan'24, Stanley P. Fosgate'24, Lloyd J. Porter'24, Richard L. O'Donovan'27, O. W. Burtner, Jr.'31, Meyer A. Baskin'34, Robert S. Bush'37, Robert Nedbor'37, Paul W. Comstock'39, Irving Peskoe'39, Frank J. Walker'41, Harry E. Eley'49, D. S. Whitmore'49. — IRVING PESKOE'39, *Acting Secretary*, 2852 S.W. 22d Terrace, Miami 34, Fla.

Washington Society of the M.I.T.

The Society was again fortunate in being able to have its annual picnic on June 25 at the charming country house of Allen B. McDaniel'01. The house was originally an early Quaker Meeting House and is located in Waterford, Va., a delightful town which contains many very old houses which have been restored to their original 18th Century quaintness.

The picnic was held in two parts. The first part took place at a dammed up creek where many Alumni, their wives and children enjoyed a refreshing swim. A large meadow nearby provided a fine place to play baseball. The second part of the picnic was held at Mr. McDaniel's house. Tables were set up on the spacious lawn and a picnic supper was enjoyed by all. It is fun to meet Alumni at the regular meetings and it is equally enjoyable to meet their families, many of whom came to the picnic. The picnic was well attended and considered an outstanding success. — JOHN ADE PLUGGE'29, *Secretary*, 35 Oxford Street, Chevy Chase 15, Md. ALBERT F. BIRD'30, *Review Secretary*, 5070 Temple Hills Road, S.E., Washington 20, D.C.

The M.I.T. Club of Western Pennsylvania

The Club held its annual picnic on September 16 at Joe Thistle's estate at 1240 Washington Road, Mt. Lebanon. Present to enjoy playing cards, refreshments, entertainment and singing were the following members: A. J. Abrams'24, H. M. Baker'30, E. M. Barnes'23, W. J. Bates'35, G. M. Bliss'42, O. V. Chamberlin'11, E. L. Chappell'24, E. J. Cole'44, P. A. Daniel'34, V. J. Dobert'36, J. D. Eichenberg'49, F. J. Fleischauer'42, D. S. Fraser'28, J. E. Frazier'24, J. E. Haggett'47, H. C. Hoar'25, G. M. Hoffman'28, B. M. Hutchins'32, L. K. Johnson'43, Herbert Kay'47, R. L. Ker-

rigan'45, W. C. King'48, R. G. Lafean'19, E. F. Lynch'32, R. W. McKinley'40, I. E. Madsen'33, A. T. Mason'33, E. H. Millard'03, C. H. Mohr'33, G. C. Morrisette'35, C. F. Peck, Jr.'41, I. K. Peck'21, T. F. Reed'40, F. G. Richards'34, J. F. Robinson'22, C. D. Robinson'41, Henry Rockwood'32, W. F. Schaefer'48, and J. L. Thistle'32.

Monthly meetings are planned for the coming year and will be held in, or places easily reached from, downtown Pittsburgh. The first of these meetings was held at the University Club on October 18. The program for the meetings will include the traditional stein at approximately 6:30 P.M., dinner at 7:00 P.M., speakers or movies at 8:00 P.M., and discussions, the stein, and good fellowship for as long as one cares to stay. — GEORGE C. MORRISSETTE'35, *Registrar*, 469 Mapleton Avenue, Mt. Lebanon, Pittsburgh 16, Pa.

Worcester County Alumni Association of M.I.T.

A reception for James R. Killian, Jr.'26, and Mrs. Killian, was held on June 28 by this Association at the Sterling Inn, Sterling, Mass., in recognition of Dr. Killian's recent inauguration as president of the Institute. H. E. Lobdell'17, Executive Vice-president of the Alumni Association, accompanied Dr. and Mrs. Killian to the meeting. This was our first Ladies Night in three years, but we expect to make it an annual affair in the future. Ralph Mahony'18, and Mrs. Mahony, proprietors of the Inn, served us an excellent meal which received many favorable comments.

Arthur J. Lariviere'35, retiring President, presided and introduced Dr. Killian, who spoke on, "What's New at M.I.T." Dr. Killian pointed out that enrollment at Technology was getting back to a peacetime basis with the number of veteran students dropping sharply, and the total number of students dropping slowly toward the stabilized enrollment figure. He discussed the problems faced by privately endowed institutions in securing financial means to meet their ever increasing demands for higher education. He suggested that an increase in the number and enrollment of junior colleges might enable more young people to obtain some degree of higher education and would distribute financial resources to a greater number of students. The junior colleges could serve those who would benefit from a short course beyond secondary school, but who would be unsuited for a full college course. After Dr. Killian spoke, Mrs. Killian was introduced and said a few words to the group. We are happy to join the Alumni Association in welcoming Mrs. Killian as one of its honorary members. Mr. Lobdell brought greetings to the Club from the Alumni Association.

This was also our annual meeting and an election of officers for the 1949-1950 season was held. The nominating committee, which consisted of George R. Blake'39, chairman, Chester A. Williams, Jr.'39, Philip B. Walker, Jr.'34, and William G. Scola'43, presented the following slate of officers which was approved

by the membership: President, Mac Levine'25; Vice-president, Howard F. Atwood'32; Treasurer, Robert N. C. Hessel'27; Secretary, Donald M. Whitehead'45; Assistant Secretary, Warren H. Howard'44. Elected to the executive committee were: Arthur J. Lariviere'35, retiring president; Thomas P. Kelly'18, Robert G. Clarke'35, David L. Sargent'38, Frederick E. Mader'32, George R. Blake'39, and W. Franklin Baxter, Jr.,'34.

The following Alumni attended with their guests: Channing M. Wells'92, Harry M. Latham'93, Fred B. Dawes'98, Herbert S. May'02, Harry S. Kendall'04, Andrew B. Sherman'06, Charles E. Allen'07, Orville B. Denison'11, Stanford H. Hartshorn'11, Ercell A. Teeson'15, Thomas P. Kelly'18, Ralph G. Mahony'18, Ernest P. Whitehead'20, Harold O. Berry'22, Leonard J. Brooks'23, Mac Levine'25, Robert T. Dawes'26, Robert N. C. Hessel'27, Roger R. Smith'27, Arthur E. Jorjorian'31, John J. McNiff'31, Howard F. Atwood'32, G. Arthur Lowery'32, Frederick E. Mader'32, W. Franklin Baxter, Jr.,'34, Robert G. Clarke'35, Arthur J. Lariviere'35, Harold McCrensky'38, David L. Sargent'38, George R. Blake'39, Warren H. Howard'44 and Donald M. Whitehead'45.

The meeting closed with songs led by O. B. Denison'11. — DONALD M. WHITEHEAD,'45 Secretary, 464 Salisbury Street, Worcester, Mass.

CLASS NOTES

• 1885 •

Joseph E. Nute died in Fall River, Mass., on September 15 after an illness of many months; much of this time in a hospital. He graduated in 1885 with a bachelor of science degree in Course I. He was for three years superintendent of distribution for the United Gas Improvement Company in Jersey City, N.J., and for 35 years was manager of the Fall River Gas Works Company until his retirement in January, 1925. He was a genial man, much interested in his class, and a constant attendant at reunions or luncheons. In Fall River he was very active in the Chamber of Commerce, the American Red Cross and the Council of Boy Scouts. — ARTHUR K. HUNT, Secretary, Longwood Towers, Brookline 46, Mass.

• 1886 •

The Alumni annual gathering occurred on June 11, and as I attended I thought I might give my experiences there in lieu of notes from the members, which are few and far between. The registration and distribution of tickets took place in the new Rogers Building on Massachusetts Avenue, and after I got my tickets, I made an inspection of the membership bulletin board which gave my name as secretary of '86 (apparently the only representative of our Class there). 1882 and 1884 were represented by one and two

members, respectively. I felt sorry that our Class had no graduate representative present; only a "might-have-been." Groups were being formed to visit some of the new research laboratories, and I joined a group to inspect the new Synchrotron which was under construction. We were put under the care of an engineer who gave us a lecture upon the development and action of the big multiple magnet which acts like a monstrous egg beater and sets the what-you-may-call-'ems whirling round in a condensing spiral until the critical moment is reached when — bang, they all fly off at tangents and penetrate the inner sanctums of the atoms or protons or nuclei or something! Of course I may not have the gist of the matter correctly stated, not being a graduate; although I did take the VIII Course! I visited several other laboratories until my head buzzed; then to have a rest I went up to the library under the big dome and spent some time in the card catalogue room to see what publications of my brother Harvey S. Chase'83 and his son Stuart Chase'10 were recorded, and found numerous citations of each. I also looked at the cards of Walter Renton Ingalls, with whom I have been having some correspondence, and found him represented by 13 cards giving the titles of some of his reports in the field of zinc and allied metals. Sometime I shall spend a day in the library and look up the names of living members of '86 and report my findings provided I do not die before getting around to it (and provided also there are any findings). I looked in vain for mention of a poem by your present Secretary published in *The Tech* in '83 or '84. Thus, are the truly great overlooked! After the buffet lunch in the Du Pont Court I went to see the interesting pictures of the old and new M.I.T. activities being shown in Huntington Hall. This was followed by the President's reception in the new dormitory.

At the Alumni Banquet in the Hotel Statler, early class representatives up to 1888 were seated at one table; again I was the only member of '86 present. The climax of the evening was the report of the 25-year Class which presented \$81,300 to the Alumni Association as their birthday gift, the largest gift of this kind on record. Mention was made, also, of the \$1,000,000 gift of Alfred P. Sloan to the new fund of which the goal is \$20,000,000. Hasn't some '86 man a million to match Mr. Sloan's magnificent gift? Denny led in the Technology songs as usual and the various classes gave their class calls during the banquet. The literary exercises were all reported in the July Review, so I need not touch upon them here. It seems too bad that '86 couldn't have been more adequately represented. It made me wonder if, in spite of my 85 years, I am spryer than most of my contemporaries. Several '86 full-timers live in this vicinity, and it is a pity that some of them could not have attended for a short time at least. Perhaps some did, but if so, I did not see them.

Since the July notes I have had letters from Ingalls, H. P. Merriam, Benson (S.M.A. '86), Campbell, and Duff, and have communicated by letter or notice

with all recorded '86 Alumni asking for personal reminiscences. Among others the following letter, somewhat condensed, came from Campbell: "Hi Ho '86. Possibly it would be more cordial to say, Hoot mon! hoo's a' wi' ye? and the richt answer would be without decoding, Brawly! thanks for spierin' or ta mak it mair brief, Gae weel! Weel folks, it sure is a far cry to '86, three score plus three, almost a life span of three score and ten. Yon Scribler Chase has asked me ta say a few wurd's ta ye in the November Review. It's all richt as far as 'few' goes, but when it comes to wurd's, there's the puzzlement, as Amos 'n Andy might say. I must confine my wurd's to the Auld Lang Syne as it would be impossible for me ta say anything about the future without consulting the 'Glass Ball' and all that I ken aboot glass balls is to remember when a lad of going out on a point in the Charles River and watching shooters splinter them in practice for the coming competition. That point is where Technology now stands, and it was across it that the Americans occupying Fort Washington would have fired their shot against any British boats that might have been on their way to Captain's Island where powder was stored for the Minute Men at Cambridge Common. Such boats would have been boarded on the Charles River at the north side of the Common, for there was no Charles Street in those days. Below this point was another known as Whittemore's Point, now covered by the M.I.T. buildings, where we youngsters used to go for a good swim. Not long after these swimming years I 'cooked' the rivets for a boiler that was being built for the Rogers Building. That particular boiler — they call them steam units now — had a steam drum or dome on its top. At that period there was quite a difference of opinion among engineers as to the value of putting a drum or dome on top of boilers, but it was called for on this one, so on it went. The engineer at the Institute at that time was Patrick Henry Hogan; I met him in after years when he was New England manager for a Chicago house that made a specialty of analyzing water for use in boilers. This boiler was built in the early '80's and I think was installed under the steps of the Rogers Building for heating purposes. At this time the Massachusetts Code of Rules for Pressure Vessels was unknown; if my memory serves me aright, they were 'borned' about 1894. Weel, fellers, we dinna meet very often, but here's ta ye, and when we do meet and greet, 'ere's 'opin' we'll tak' a right gude willie waught for auld lang syne. Lang may yer lum reek and muckle joy be wi' ye! All on yer pins (Chase would say hind legs) glasses up! here's to our alma mater for her phenomenal achievement in what she has done in the sciences and industries."

Benson has informed me of the sudden death of Charles H. Herrick, Secretary and Assistant Treasurer of '86 S.M.A., on Tuesday, August 2. He enclosed a clipping from the *Lynn Item* giving a detailed account of Mr. Herrick's connections since he graduated from S.M.A. I quote as follows: "Charles H. Herrick, one of the pioneers of the electrical in-

dustry during the early days of the old Thomson-Houston Co. in Lynn, prior to the turn of the century, died Tuesday at his home, 370 Columbus Ave., Boston. His work in Lynn included association with the late Prof. Elihu Thomson, noted scientist and inventor, in the early development of the alternating current system of electric lighting. The Thomson-Houston Co. later merged with the Edison Co. to form General Electric. During that period he personally installed alternating current system transformers at the homes of Professor Thomson, Edwin W. Rice, Jr., and Charles A. Coffin. . . . Later, Mr. Herrick was associated with Thomas A. Edison personally during the installation of the first Edison lighting system in Boston. He wired the generating station at Head Place, Boston, and also the Bijou Theatre, which was heralded as the first western hemisphere theatre to be lighted electrically. While at Lynn, Mr. Herrick organized the Thomson-Houston Electric, one of the strongest semi-professional baseball clubs in the East. He was its first captain, although he remained active for only a brief period of time."

Merriam reported that he was ill, but would send some notes later, and Ingalls sent an interesting account of his doings which I shall reserve for the December issue. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1887 •

When our President, Richard E. Schmidt, left the Institute he entered the office of Charles Frost '79. Frost ranked high among the architects of Chicago and Dick received the best preliminary training possible there. In 1894, some 55 years ago, he opened his own office and was delegated to draw the plans of the present Alexian Brothers Hospital. The resulting structure, his first major project, was a hospital most complete and modern in every detail at that time. Architects and leaders in the hospital field came to inspect the new building and to find ideas adaptable to their own projects. Now in his eighties, Mr. Schmidt has designed more than 100 hospitals, commercial and industrial buildings. Locally, there are nine of these hospitals in the Chicago district. When it was decided to undertake present additions and a few embellishments to the present Alexian Brothers Hospital, he assumed personal charge of the architectural requirements. While he has efficient partners, it is seldom that he takes any vacations; only a few summer week ends at a cottage on a lake near the southern end of Wisconsin. Being busy seems to be a tonic that agrees with him.

When Julian A. Cameron passed away in April of this year it was like losing one of the Old Guard. He was always in attendance at our five-year reunions and according to the records of Mr. Very, our previous Secretary, he was a regular at the Christmas holiday meeting at the Parker House for many years. At present there are not enough of us available to continue these meetings. He was president of the Abbot Worsted Company since it was founded in 1900. He was

also associated with the Sugden Press Bagging Company for many years, a member of the Westford board of selectmen and a member of the J. V. Fletcher library trustees. He served on the Westford finance board and was a director of the Westford Water Company. Since 1939, when they sold their Westford estate, Mr. and Mrs. Cameron had made their home in Concord, Mass. Surviving are his wife, a son Alexander A. Cameron, two daughters, Mrs. Eleanor Hayward of Dedham and Mrs. Marjorie C. Hoover of Arizona and five grandchildren. — LONSDALE GREEN, *Secretary*, 5639 Kenwood Avenue, Chicago 37, Ill.

• 1888 •

The Class celebrated its 61st anniversary with a luncheon at the Union Club on June 10, as the guests of Johnny Runkle. Nine classmates were present: Atkinson, Bates, Cavanaugh, Ellis, Faunce, Hamblet, Runkle, Sweetland and Webster. Between the courses of an excellent luncheon, the President suggested that we take up at that time whatever class business needed attention. This resulted in the election of John C. Runkle as secretary of the Class. His address for class matters will be 49 Federal Street, Boston.

Later in the meeting, the members of the Class present stood in silence for a few moments in memory of four classmates who had died since the last meeting: Eugene S. Daniell, Bertrand R. T. Collins, John W. Linzee and Sanford E. Thompson. A resolution was passed asking the Secretary to express to the widows and families of these, our classmates, the sincere sympathy of the Class.

After a pleasant conversation hour, the Class adjourned to meet again on our 62d anniversary in June, 1950. — EDWIN S. WEBSTER, *President*, 49 Federal Street, Boston 7, Mass.

• 1890 •

Our beloved Assistant Secretary, Harry M. Goodwin, passed on in his sleep on June 26 after a normal day, and the usual swim in Asquam Lake. Half a dozen of our classmates can bear witness to his good health and spirits on Alumni Day, two weeks before, when a multitude of former students greeted him. We remember him first as the captain of his company during our freshman year, and from then on, with George Hale, as a student in Course VIII. Immediately after graduation he joined the Technology faculty as an assistant in the Physics Department and rose to become, in 1906, professor of Physics and Electrochemistry in charge of the department. Then came his work with graduate students, and the Graduate School, concerning which someone has said the growth "was the result of his insistence and persistence." His active connection with M.I.T. continued until 1942 when his lectures on Astronomy, given as honorary lecturer, were discontinued because of the War. However, he continued as professor emeritus and honorary dean a total of 59 years, which he enjoyed referring to as an outstanding record. Our records show that he studied at the Har-

vard Graduate School, received his doctor's degree at Leipzig, and continued at Berlin. He was also an enthusiastic lover of the great outdoors; taking long horseback journeys with his family in the mountains of the West. At our reunions he has given us a picture of developments and progress at M.I.T. which we shall sadly miss. He was enthusiastically looking forward to our 60th reunion. His wife, Mary Linder, his son, Richard Hale, Professor of Botany at Connecticut College, and two small grandchildren survive. Elsewhere in this issue of *The Review* is a biographical appreciation of his work closing with a poem; a message of cheer he wished read when we gathered to say farewell. We would make this a part of these notes.

At the June 11 Alumni Day, '90 made the best showing since our 55th reunion, with eight men present: Batchelder, Burley, Crane, Goodwin, Greenlaw, Lenfest, Packard and Sherman. A generally healthy looking group, the manner of celebrating our 60th next year was the principal topic of conversation.

From the Boston Sunday *Herald* for September 11, in a discussion of the accomplishments of the women graduates of M.I.T. is the following concerning our Lois Lilley Howe: "A Boston architect for fifty years and the first woman to be chosen Fellow of the American Institute of Architects, she is regarded as an authority on colonial architecture." — Notice of the change of summer address of William P. Flint to Post Office Box 66, West Chester, Pa., was received too late for the July Review. (January usually sees him back in St. Petersburg, Fla.) Leon Wertheimer's address is now 825 Morewood Avenue, Pittsburgh, Pa.

At our 50th reunion we voted that the officers of '90 shall be a secretary and an assistant secretary "and that in the event that the incumbent of either of these offices shall cease to be able to act, the other officer, as secretary, shall appoint an assistant secretary. In accordance with this vote the secretary, after conferring with the Alumni Office, has appointed Charles W. Sherman as assistant secretary, and we are delighted to report that he has accepted. Charles has done a number of things for the Class in the past, the latest being our representative on the Alumni Fund. — GEORGE A. PACKARD, *Secretary*, 53 State Street, Boston 9, Mass. CHARLES W. SHERMAN, *Assistant Secretary*, 16 Myrtle Street, Belmont 78, Mass.

• 1891 •

We will all miss our former Secretary, Henry Fiske, after 20-odd years as the best Secretary any class at M.I.T. ever had. He was always cheerful and optimistic and had a great sense of humor. With his large correspondence and opportunity to call on members of the Class in various parts of the country, he kept the Class together and created a wonderful class spirit. Henry died on July 24 in Providence, R.I., and the Providence paper printed the following article: "Henry Anthony Fiske, 79, manager of the Grinnell Corporation's insurance department for more than 30 years, died in Providence . . . after a two months' illness. An authority on fire pro-

tection, he was awarded an honorary membership certificate in the National Fire Protection Association in 1946. Mr. Fiske was born in Fall River, May 16, 1870, attended Roxbury Latin School, Class of '88, and graduated from . . . Technology in 1891 with a Bachelor of Science Degree in Chemical Engineering. He founded a Greek Letter Society at M.I.T., and stayed on to take a post-graduate course in electrical engineering. After college, Mr. Fiske joined the Underwriters' Bureau of New England as an inspector. He advanced to Superintendent of Surveys and was named Manager and Secretary of the Bureau in 1900. Taking an active part in the work of the National Fire Protection Association, he was a member of several of its committees, including one charged with investigating devices and materials. He also served as consultant to many public bodies on insurance matters. Mr. Fiske and Everett U. Crosby were co-authors of a standard textbook on fire protection engineering, now in its 10th edition. The volume has been called "The Bible of Fire Insurance Engineering." He was also the author of numerous pamphlets on fire protection, prevention and fire hazards. He was a member of the Mayflower Association of Massachusetts and the Sons of the Revolution. He is survived by his wife, Mrs. Frances E. Fiske, and two daughters, Mrs. Stanley Howe and Mrs. Kingdon P. Cass."

In addition to the above, Gorham Dana gives us the following information: He was at one time special agent for the Imperial Insurance Company. In 1903, he moved to Hartford and was manager of the special risk department of the Phoenix Insurance Company and was editor of the magazine of the National Fire Protection Association. He was a member of the firm of Henry W. Brown Insurance Agency in New York and, later, a member of the firm of Gilmore, Rothery Company in Boston. In 1930, he was made manager of the inspection and service department of the Grinnell Company of Providence. For many years he lived at Longwood Towers in Brookline. In 1894 he married Frances E. Thomas. His fraternity was Phi Beta Epsilon. The Class was represented at his funeral by Brown, Bunker, Clark, Damon, Dana, Hatch, Howard, Tappan and Young.

We have also to report the passing of another of our greatly admired members, John Henry Birks, who died at the Montreal General Hospital on March 24. The Montreal Gazette of March 25 gives the following brief outline of his life of service: "Mr. Birks was vice-chairman of the board of directors of Henry Birks & Sons, Ltd. For six years prior to 1944, he was president of the company, from which position he resigned. He was succeeded by his nephew, Henry G. Birks. Mr. Birks was born in Montreal, the second son of Henry Birks and Harriet Phillips Walker. He was educated at Montreal High School and . . . Technology. . . . An enthusiastic sportsman, Mr. Birks was one of the founders of the Kanawaki Golf Club and was its first president. He was also interested in curling and was an active member of the Montreal Curling Club. Other interests of his included church work, particu-

larly as a member of Erskine and American United Church, as well as the Boys' Farm and Training School at Shawbridge, the Y.M.C.A. and other philanthropic endeavors.

"Mr. Birks entered his father's business at an early age and was placed in charge of Birks' factories. Under his guidance, these developed into plants employing more than 400 workers who design and produce silverware and jewelry which bear the Birks name. When the firm was incorporated as a company in 1905, Mr. Birks was named a director and was appointed secretary. He carried on his duties as a secretary until 1924, when, because of other responsibilities, he resigned that position but remained as a director. In 1928 he became first vice-president of the firm. Ten years later he was elected president. Mr. Birks was married twice. His first wife was Annie McNeill, of Oskaloosa, Ia., who died in 1926. Mr. Birks is survived by his widow the former Elizabeth McConnell of Montreal; one son, Hobart M. Birks of Los Angeles, Cal; two daughters, Mrs. William Wilson, Pasadena, Cal., and Miss Joyce Birks, Montreal; two brothers, William M. Birks, C.B.E., LL.D., and Col. Gerald W. Birks, O.B.E."

A letter from Cambridge, England, written by our old classmate Robert Ball to Henry Fiske on June 28, seems to be of special interest at this time, as the last one of his many letters to Henry and as giving a glimpse of present day life in England: "It was only today that I heard you were ill; Harry Young informed me in a letter. I am very sorry you are unwell and hope for a speedy recovery. I trust you were able to attend the annual dinner of '91 and that you could pass on my good wishes to the boys! Were you to pay us a visit here you would see that outwardly everything looked pleasing. The countryside is the same beautiful picture as always and there is still a semblance of prosperity, if you did not look too closely into things! The first shock you would experience would be at the hotel for a meal when you would find a hearty appetite was not satisfied. Also you would notice heavy charges for articles of diet which were cheaper in Boston. While we do not suffer hunger (far from it) the diet is not interesting. Nevertheless, the health of the population is good and after all that is what matters most. We grow all our own vegetables and have an apple orchard that keeps us in fruit throughout the year. Meat is the most affected of all our wants but, thanks to your country, we are not entirely without it, though the celebrated roast beef of old England is as dead as the dodo!

"It was very enterprising of M.I.T. to entertain our hero, Winston Churchill. Gorham Dana sent me The Review which explained the festivities and made me proud to think that it was due to our alma mater that brought this about. Some wag has said that W. C. was half American and wholly English. I think that is not a bad description, do you? My thoughts, when directed outside this little Island, are divided between the great continent on the west and another on the east where my daughter and grandchildren live. What a contrast they present, these two worlds.

One in the band wagon of civilization, the other a colony just emerging from a state inimical to the white man. It was only at the beginning of the century when the building of the Mombasa Railway opened up the way for the white man. When we were at Technology there was no Kenya such. Whether the white man can keep his position there remains to be seen. The education of the African and the immigration of Indians make the future doubtful."

The annual get together of the Class brought out 13 on the active list of 36. Luncheon at the Algonquin Club and dinner at The Country Club, Brookline, furnished a fine background for an afternoon and evening of interesting reminiscences and discussions. We all greatly missed the flow of information and good humor from our Secretary, Henry, which has contributed so much to our meetings. Your present Secretary is a pinch hitter at the request of Henry when he found he could not attend the dinner, and by election as assistant secretary at the dinner. — FRANK W. HOWARD, Secretary, 294 Pleasant Street, Watertown 72, Mass. Telephone, Watertown 4-5910.

• 1892 •

At the luncheon in Du Pont Court on Alumni Day last June four members of the Class were present; the President, George Ingraham, with Mrs. Ingraham; Harry Burnham; Harry Carlson and the Secretary. At the banquet at the Statler, Carlson and the Secretary represented the Class.

Last July the Secretary received a letter from Channing Wells in which he recalled the very pleasant time we had at our 55th reunion at Marblehead and wished the Class would get together oftener than once in five years. He suggested that he would be very glad to receive a visit from the members of the Class at Southbridge during the latter part of the summer or early fall. On account of an unusual pressure of work during the summer, the Secretary has not been able to formulate any plans up to the present time and would suggest, however, that the members of the Class who might be interested in a visit to Southbridge and the neighboring Sturbridge where Wells lives contact the Secretary and that we make plans for a trip down there during the coming spring.

The Secretary is sorry to have to report the deaths of four of our classmates during the past summer: Congdon, Forsyth, Hilliard, and Wooffindale. — Carey Congdon died at the age of 79 at his home in New London, Conn., on July 20 after a serious illness. He was with us only a year in Course VIII, after which he transferred to Harvard. After he graduated he served for 55 years in various positions on the city government of the city of New London, finally acting as city manager up to his retirement in 1946. He was a veteran of the Spanish War in which he served as a first lieutenant, and in the first World War was a captain in the intelligence office for the third military district in Connecticut. He was prominent in the Masonic Order, serving in the highest offices in its various fields. He was a member of

the St. James Episcopal Church in New London.

John D. Hilliard died at his home in Glens Falls, N.Y., on June 19 after a long illness. He was born in Provincetown, Mass., and graduated with us in the Course in Electrical Engineering. For many years he was associated with the General Electric Company; first at Lynn, later at Schenectady, specializing in the development of oil switches and circuit breakers. He held more than 70 patents for inventions, most of which were assigned to the General Electric Company. For a considerable time he was consulting engineer for the Allis-Chalmers Company in Milwaukee, Wis.

Warren H. Wooffindale died at his home in Williamstown, Mass., on August 6. He was born in Charlestown and attended Course V with us for a number of years. During practically his whole career he was a chemist in the textile industry. For many years he was connected with the Bond Mills in Williamstown. He was a member of various Masonic bodies. — We also have a notice of the death of Herbert Forsyth on June 1. He was with us for a while as a student in Course IV.

In a more pleasant vein, the Secretary would recommend to any who have not done so to read a book entitled, *Green Seas and White Ice* written by Mrs. Donald B. (Mariam) MacMillan, the daughter of our late classmate, M. Jerome Look. Those who were with us at our 45th anniversary at Dennisport will probably recall that Look was present at that reunion. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1893 •

The annual luncheon meeting of the Class was held at the Engineers Club, 96 Beacon Street, Boston, on June 9. Fourteen members of the Class were present including: J. B. Baxter, J. B. Blair, L. B. Buchanan, H. N. Dawes, G. B. Glidden, F. H. Keyes, W. F. Lamb, H. M. Latham, E. I. Leeds, Edward Page, A. S. Pevear, C. M. Spofford, E. M. Taylor and J. F. Tomfohrde.

Spofford read an appreciative letter from Torossians' daughter thanking us for the clothing which has been received in response to her father's previous request, and suggesting the possibility of making a further donation of food. For this purpose, the Treasurer was authorized to spend \$25. A package containing meat and other items, with the exception of sugar, flour and milk, which were specifically mentioned to omit, was ordered to be forwarded from the S. S. Pierce Company on June 16.

At the business meeting, immediately following the luncheon, the following officers were elected for the ensuing year: H. N. Dawes, President; L. B. Buchanan, First Vice-president; J. B. Baxter, Second Vice-president; C. M. Spofford, Treasurer; F. H. Keyes, Secretary; and G. B. Glidden, Assistant Treasurer and Assistant Secretary.

A very generous contribution to the Alumni Fund by one member of the Class made it possible to exceed our quota again for 1948-1949, but many members of the Class have yet to be recorded as

making any contribution to this most worthy effort. — FREDERIC H. KEYES, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, 38 Chauncy Street, Boston 11, Mass.

• 1894 •

The long anticipated 55th anniversary of the graduation of our Class took place as scheduled in the class letters from the Secretary. Although the attendance was not as large as we had hoped, a really representative gathering of the Class met for the two-day celebration which included attendance at Alumni Day and the Alumni Banquet at the Statler on June 11, as well as our own special reunion day at the Brae Burn Country Club on the previous day, and our dinner at the Beaconsfield Hotel in Brookline on June 10. It is an understatement to say merely that a good time was had by all who attended. The members of the Class, accompanied in most cases by their wives, gathered on Friday morning at Brae Burn, and after the usual preliminaries, proceeded to enjoy the day; fortunately, it was one of brilliant sunshine but not too hot for outdoor meeting, and golf for those who were so inclined.

Those present were: President Horace Crary and Mrs. Crary of Warren, Pa.; Charles G. Abbot, for many years secretary of the Smithsonian Institution at Washington, and now a research associate there; Edward M. Hunt and Mrs. Hunt of Portland, Maine; William H. King and Mrs. King from New York; Norwin S. Bean and Mrs. Bean from Manchester, N.H.; Harold M. Chase from Danville, Va.; Ferdinand A. Schiertz and Mrs. Schiertz from Roxbury; George A. Taber and Mrs. Taber from Reading; Professor Emeritus George Owen and Mrs. Owen from Newton Center; Alan A. Claffin and Mrs. Claffin from Winchester, accompanied by their artist daughter Mrs. Pratt of Seattle, Wash.; Henry E. Warren and Mrs. Warren from Ashland; Leslie R. Moore from Concord; Walter V. Batson from Newton Center; Henry F. Copeland from New York City; and your Secretary and Mrs. Prescott of Brookline.

Soon Mr. and Mrs. Crary, Abbott and Bean took to the field for a round of golf, while the less athletic group gathered on the lawn or at the bridge tables in the Club and spent the morning reviewing the days of old and discussing the experiences of the years that have passed since our 50th reunion at Swampscott five years ago. After the golfers had returned to the clubhouse, some excellent group pictures in color were taken by Warren. Unfortunately, these cannot be reproduced in these notes but Warren has kindly provided each classmate present with prints; one of the class members by themselves, and a second with the ladies included in the group. These will be kept by us all as fine souvenirs of a most enjoyable occasion and as a reminder of the constant loyalty of Warren to the Class. We met for a finely appointed and most satisfactory luncheon which the steward of the Club had arranged for us at approximately one o'clock. Arrangements for the use of the

Brae Burn Club were made through the courtesy of its President, C. Adrian Sawyer, Jr., '02, who is also president of the Alumni Association. Our deep gratitude to Mr. Sawyer is hereby expressed. After luncheon more "visiting" and renewing of old acquaintances were in order, with more golf for those who had participated in the morning. Then came departure to be in readiness for the dinner at the Beaconsfield where we were reinforced by George Leiper, who had come on from Philadelphia for the occasion, and by Charles B. Beach and his wife from Dubuque, Iowa, who had never been in attendance at any previous reunion. It was a great pleasure to see him again after the lapse of 55 years.

The dinner followed our usual pattern and was presided over by President Crary. The Secretary was called on for a report, and perhaps the most impressive part of this was the necrology which showed the loss of 44 classmates since our meeting in 1944. The deaths included a large number of those who had been prominent in business and professional life as well as ever loyal members of the Class. This is inevitable in view of the age to which we have attained. At the present time approximately 40 per cent of the Class still survives. Following this report, each member of the Class spoke briefly, mentioning his principal activity and his deep appreciation of what M.I.T. and the Class has meant to him through the years since we departed as newly fledged graduates.

The Secretary received many letters expressing regret at inability to be present; these letters coming from all parts of the land. Especially notable were the letters from Frederick M. Manse, Austin Sperry and John C. Nowell of California, from Theophilus C. Davies of England, and from Harry R. Bates of Atlanta.

On Saturday most of the Class attended Alumni Day at the Institute, and readers of *The Review* will find in the July, 1949, issue on page 575 a picture showing the Class at the luncheon in Du Pont Court. A misprint of Claffin's name occurs in the accompanying statement, due to the failure of the photographer to get it correctly. Practically all those in attendance at the luncheon were also at the banquet at the Statler but, unfortunately, could not be seated together. Thus ended our reunion.

It is with deepest regret that the Secretary must record the death of Harry R. Bates which suddenly occurred in Atlanta on the 22d of August. A letter from his daughter brought the sad news, and also stated that the M.I.T. group in Atlanta honored his high standing and his memory by sending a beautiful floral pillow which stood at the head of the casket at the services in the church and at the grave. He was certainly held in high regard by all who knew him in business or socially. An attempt will be made to give a brief statement of his career in later class notes. — SAMUEL C. PRESCOTT, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass.

• 1895 •

It is interesting to learn that the income from the \$25,000 class gift to the Technology Loan Fund, on the anniversary of

our 50th reunion, amounts to \$3,824 as of June 30. You will recall that the income from this gift is available for scholarships or assistance to the grandchildren of members of the Class. To date, no one has applied. Possibly a number of our classmates have forgotten that this fund is available and can be used upon proper application. It is hoped that there are some grandchildren developing who may make use of this fund.

We learned recently from Mrs. M. H. Pease, Jr., of Hamden, Conn., that her father, William B. Stork, II, passed away on March 20 at the Union Memorial Hospital in Baltimore, Md. Stork was surely a man o'war's man and Naval officer. From the time of his graduation to his retirement from service, he served in all positions from machinist to lieutenant, July 1, 1918, and traveled all over the world. During the Spanish War he was chief engineer of the U.S.S. *Neginscot* (patrol boat) operating between Key West and Dry Tortugas, Fla. He was in Havana Harbor on the U.S.S. *Louisiana* at the time of Cuban Pacification, September, 1906. He went around the world with the battleship fleet in 1907-1908 as assistant officer in charge of boiler stations on the U.S.S. *Louisiana*. Stork was an officially qualified expert rifleman, United States Navy, and a sharpshooter in the National Rifle Association of America. He loved the sea and spent his life with the Navy.

Edward P. Hutchinson passed on after a long illness at his home in Hampton, N.H., on June 24. He was an instructor at Technology for several years, and then organized the manual training program for the schools in Brookline, Mass., and headed the department for 25 years. He retired from this work approximately 20 years ago. He lived in Brighton, Mass., for many years and had his summer home in New Hampshire.

Sidney K. Clapp, I, passed on August 15 at his home in Kingston, N.Y. Clapp was with the Metropolitan Water Board, Boston, from 1895 to 1901. For the next two years he served with R. A. Cairns, city engineer, Waterbury, Conn. From 1903 to 1905 he worked with the New York additional water supply commission for the Ashokan Reservation. In 1905 he was connected with the board of water supply, city of New York, Catskill department. For 42 years he continued this connection. In 1945 he retired. During last winter he and Mrs. Clapp were in Coral Gables and Miami, Fla., for their health. Returning to Kingston, Sidney wrote that both were in good shape, but the end came suddenly. Sidney was the last of the '95 Clapps.

Hunsdon Cary is now located at Ampthill House, on Ampthill Road, Richmond, Va. Carl H. Clark's new address is 28 Waterston Avenue, Wollaston 70, Mass. Harold G. Fitz is now at 33 Washington Square W, New York, N.Y. The Alumni Banquet is a matter of past history but it may be well to report that two mates attended, Alden and Yoder. However we enjoyed the company of Abbot, Batson, Beach, Crary, Hunt, and King of '94, and Wadleigh and Worcester of '97. — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

We welcome our classmates on their return to home conditions, with the hope that all has been well with them and that health and happiness may be their lot during the remaining months of 1949. We have heard from all compass points in America during the past months. And are we proud of the record of achievement made by these members of our Class! Why not send in your biography of activities?

Henry A. Waterman retired after 11 years as a member of the Canadian legislative assembly from Yarmouth County, Nova Scotia. — Paul W. Litchfield, President of the Goodyear Tire and Rubber Company, received out of the hands of Minister Souza Leao at Itamaraty Palace the order of the Cruzeiro do Sul, degree of commander, awarded to him by President Dutra in recognition of valuable services rendered to Brazil. Litchfield went to Brazil for the purpose of receiving the distinction granted to him. — Charles G. Hyde, professor emeritus of sanitary engineering, was awarded an LL.D. degree on June 17 from the University of California. — William H. McAlpine, engineer consultant to Major General Lewis A. Pick, Chief of Engineers, was awarded a Corps of Engineer emblem on June 16 for having had the longest period of service with the Corps. Mr. McAlpine will have completed more than 47 years' service on December 31, 1949. He joined the Corps at Frankfort, Ky.

James L. Howe, professor emeritus of chemistry at Washington and Lee University in Lexington, Va., was recently honored in the Virginia college city on the occasion of his 90th birthday. — Walter and Mrs. James celebrated their golden wedding anniversary on June 20. Mrs. James is the third successive generation in her family to observe a 50th wedding anniversary; her mother and grandmother having observed their anniversaries in 1917 and 1889, respectively. — A letter was received from Lawrence Sager reporting a fine season at his summer home in Bath, Maine. — John Tilley writes that all is well with him.

Charles H. Gibson received an autographed copy of Winston Churchill's post-war speeches inscribed: "In appreciation of the sentiments contained in your poem read by Dr. Compton at the M.I.T. Convocation." Mr. Gibson's poem entitled, "To Winston Churchill" was read by Dr. Compton at a reception for Mr. Churchill during the convocation this spring and, evidently, it was very much appreciated.

Bill Anderson wrote from 306 Lafayette Avenue, Cincinnati, Ohio, to the Secretary on May 2 as follows: "We are leaving here for the Pool on June 1. Billy was here for a day. I am going to try and get him out here at least twice a year. I have moved my office from Third and Elm streets to the Transportation Building at Fourth and Sycamore but I only spend an hour or two a week at the office." Later in the month a second note was received from Bill which he wrote from the University of Cincinnati, Christian R. Holmes Hospital. Bill complained of dizzy spells and was in the hospital for a number of tests. I know the Class joins

the Secretary in sending Bill best wishes with the hope that he is feeling fine once again.

A letter from William E. Haseltine of 213 Dahlia Avenue, Corona del Mar, Calif., brings us the sad news of the passing of another classmate: "I have just received word that Reginald Norris died at Bellevue Hospital in New York on June 22. He had been living in France for many years and came to this country intending to live in California. On reaching New York earlier this year he was taken ill and the doctors diagnosed it as cancer of the lung. It is a blessing that he did not have to suffer too long. I have become a loafer in my old age and am getting the technique of doing nothing down to a fine art. I do a little sailing, fishing, photography and a little water color, not to speak of a good deal of housework. Servants are a minus quantity out here. I still retain my home in Ripon, Wis., but as my son William R. Haseltine '34 and his family are only 180 miles away (he is working as a civilian scientist at the Naval Ordnance Test Station in Inyokern, Calif.), and I have three sisters but 20 miles from here, we are much nearer all that is left of our family than we would be back in Wisconsin."

Charlie Trout sent the following note along with his class dues: "Mrs. Trout and I had a wonderful time at the Churchill affair. The nearest hotel we could get into was in Winthrop and a nice place at that." — Another letter accompanying class dues was received from Jack Eynon out in San Diego, Calif.: "Nothing in particular to report except that I do always turn first to the class notes as the most interesting part of The Review, so, more power to you." — Amos Robinson writes from San Juan, Texas: "Every time I get a Review I also get a letter from you. Those letters tell of the fellows going places and mixing with other people to make interesting news and I wish I could think of something that might be of interest to you; but having been to schools in the same part of the country probably made us agree on the issues of Communism, public money for public schools and a six-shooter in the bureau drawer even in time of peace." — A brief note and class dues were also received from Stephen Crane, Roger Williams Hotel, New York, N.Y. — From 265 Culver Road, Rochester 7, N.Y., Henry Tozier wrote to the Secretary enclosing his class dues: "While in good health, I have stuck pretty close to Rochester for the past three years."

Your Secretaries had a hand in two fishing trips. Our party, including Mrs. Rockwell and some of Fred's business friends, went to Moosehead Lake, Maine, from June 3 to June 11. The weather conditions and fishing, however, were poor. The second trip was to Henderson Harbor, Lake Ontario, the last week in July.

The Alumni Banquet held at the Hotel Statler on June 11 was a great success. We must not pass these opportunities by; let's make greater efforts to attend all of our various anniversaries. These are more precious gatherings than we realize. Dr. Compton could not attend this year's banquet but President Killian '26 made an

excellent presentation of M.I.T. affairs. Present at the banquet were: Damon, Davis, Driscoll, Grush, Howard, Rockwell and Young. Your Secretary reported to those present his trip to the cemetery in Rye, N.H., where Belle and he stood on hallowed ground and paid homage to "Our Charlie." I know full well that many of you would have cherished the opportunity of sharing this privilege with us.

New addresses: Robert D. Flood, James C. King Home, 360 East Garfield Boulevard, Chicago 15, Ill.; Leon W. Mansur, Rural Free Delivery No. 2, Box 711, Tucson, Ariz. Notices of deaths include: Eugene de Bullet in 1948; William A. Holt, district manager, Connecticut State Employment Service, Norwich, Conn., on March 9, 1948; Richard F. Morgan, professor of botany and geology at the University of Buffalo, on April 4; Benjamin Williams of Seattle, Wash., on June 7; Herbert E. Smith, Treasurer, Tidewater Engineering Company of Gloucester, on August 7; and Reginald Norris, as reported in Haseltine's letter. The Gloucester Times gives us the following information concerning Herbert Smith: "... Mr. Smith was born in Rockport, February 18, 1875, son of the late Leverett E. and Laura (Webster) Smith. He attended grade schools in Rockport and was graduated from the Gloucester High school, where he was lieutenant and adjutant in the cadet battalion, now known as the ROTC regiment. In 1896 he was awarded the degree of bachelor of science from . . . Technology, where he was a lieutenant in the M.I.T. cadet regiment. . . . Mr. Smith traveled extensively in Europe, Africa, Mexico and the West Indies and South America. He was intensely interested in art and music and studied in France, Belgium and Italy. From 1934 to 1945, he served on the School Committee and was an interested worker in civic affairs. He was an active member in the affairs of the American Society of Refrigeration Engineers, the American Chemical Society, and the American Society of Mechanical Engineers. Local clubs included the Rotary club, of which he was a past president, past president of the Camera club, the Y.M.C.A., in which he worked for and was a participant in many of its functions. He also was a member of the Cape Ann Scientific Literary and Historical society, and held life membership in The Tyrian lodge, A.F. & A.M. In recent years he resided in Florida. He married the former Evelyn D. Holmes, who passed away in Florida in 1943. Besides his second wife, he leaves by his first marriage a daughter, Elizabeth, wife of Rev. Fred R. Lewis of this city, . . . two brothers, Homer and Arthur W. Smith, both of this city, and a grandson, G. Herbert Geddes of Essex. . . . [Mr. Smith] founded the Tidewater Engineering Company in 1921, and the Tidewater Sales and Finance Corp. in 1927, was a pioneer in refrigeration, built and implemented many freezers along both the Atlantic and Pacific coasts and was active all his life as a refrigerating engineer. . . ."

Secretary Severance '38 of the Alumni Association has announced that the next two Alumni Day celebrations will be ob-

served on Monday, June 12, 1950 and Monday, June 11, 1951. Please remember our class assessment of \$2. We have already heard from approximately 30 of our members. — JOHN A. ROCKWELL, Secretary, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, Assistant Secretary, 275 Broadway, Arlington, Mass.

• 1897 •

James W. Smith, XIII, retired early in the year from his position as superintendent of the Standard Plant of the Torrington Company, Torrington, Conn. He lives in Litchfield, Conn., and has a summer home in Brimfield, Mass.

Francis B. Records, Jr., I, aged 75 years, died in Bristol, Conn., on May 17, after a long period of illness. He was connected with the Bristol Brass Corporation. He was a native of Boston, Mass. After graduation much of his time was spent abroad. He designed parks in Germany, France, England and Bermuda. He went to Bristol in 1914 and during his life there designed three principal parks.

Your Secretary, assistant plant engineer of the Arlington Mills, Lawrence, Mass., retired on May 1 after a continuous service of 50 years. He was given a dinner by the executives and associates of the mills and was presented with a pair of 10 by 35 prism binoculars to further the enjoyment of his principal hobby, the study of wild birds and flowers. He had previously been given a gold wrist watch and an easy chair by the office force and employees of the plant engineering department. The agent of the Arlington Mills presented him with a 50-year service pin studded with ten diamonds. John went to the mills in 1899 as an assistant in the mechanical department. In 1909 he was made assistant mechanical superintendent, which title was changed in 1928 to assistant plant engineer. Your Secretary wishes to apologize for the inclusion in the news column of the foregoing but the fact is that Walter Humphreys, secretary-treasurer of the National Association of Wool Manufacturers, happened to see an account of the event in the mill's monthly publication, the *Whitman News*, and in a letter to your Secretary insisted that certain portions of the item, at least, be included in the class news. As the Secretary is forever criticising the members of the Class for not sending in items for *The Review*, he could offer no reasonable excuse for not complying with Walter's request. — JOHN A. COLLINS, JR., Secretary, 20 Quincy Street, Lawrence, Mass.

• 1898 •

Through the courtesy of George Cottle, there was a get-together for '98 on Saturday afternoon of Alumni Day at the Algonquin Club. There were present: Barker, Chapin, Dawes, Edgerly, Fenner, Fleisher, High, Lansingh, Perry and Russ. In addition, there were received 82 cards from other classmates, a remarkable number. Many cards contained cordial greetings and messages, some quite extensive. These will be woven into class notes as opportunity offers. A short business meet-

ing was held, results of which will be reported in various presidential letters. Eight classmates attended the Alumni Banquet in the evening at the Statler: Barker, Chapin, Dawes, Edgerly, Fenner, High, Lansingh, and Perry.

George Cottle, who had arranged for the get-together at the Algonquin Club, had flown to Sweden during the previous week for a two months' trip through Europe. With him were his sisters and several friends; the itinerary comprised two weeks in Sweden and then a week or ten days in each of the following countries: Switzerland, France, and England. We are looking forward to seeing those pictures, George!

During the past year there have been several gaps in our ranks. Names and dates as nearly as we can ascertain are as follows: John W. Dodd, March 17; Philip Richardson, April 9; Shirley S. Philbrick, May 17; Howard C. Underwood, June 5; and Dr. John H. Lambert, September 10. Helen Fitch Philbrick has kindly furnished us with information concerning her husband. We have little or no further information concerning the other classmates but trust that this will be remedied with the help of relatives and friends. And by the way, it might be a good idea if classmates and relatives and friends of classmates make it a habit to report to the Secretary the death of classmates with interesting information concerning their careers.

Helen Philbrick writes as follows: "Thank you for your kind letter of June 4. I am glad to send you some information as to Shirley's early activities. His first position was with the Laconia, N.H., Car Company where he finally had entire charge of their car designs. For a short time after this experience he traveled for the inspection department of the Factory Mutual Insurance Company. Next he went to Chicago in a position with Peabody Houghteling Company, where he organized an engineering department in connection with their investment loan business. Through this connection he found an opening in Spokane, Wash., with a real estate and insurance firm. This was our first home after our marriage. At this time, with another young engineer, he became interested in the possibilities of developing the coal resources of Alaska, but this sincere attempt was thwarted because of the extreme conservation theories of the period. Always, the problems of the home place in New Hampshire demanded his thought and attention, although the lure of the west kept him there for a few more years during which he was manager of the Lewiston-Clarkston Improvement Company which supplied electric power to seven towns in the Snake River territory. In 1914 he showed his faith in the resort possibilities of his native town by building and remodeling houses, and encouraging in every way the development of the community. During this period he became associated with the firm of Marshall and Company of Boston, and traveled extensively for them, in connection with public utility investments. World War I ended this congenial association. Of him Mr. Marshall writes, 'I have ever been a

sincere admirer of your splendid husband. We traveled many thousands of miles together, and I may say that one rarely meets a man of such high minded principles, so honest, so trustworthy, so tolerant and so dependable.' For a time during the War he served as examiner for the Emergency Fleet Corporation in Philadelphia, and later became interested in timber lands in Florida. But always his interest and resources were centered in the problems and possibilities of the town of his birth. One of his favorite poems was Kipling's 'If' and it expresses much of the philosophy of his life."

The Manchester, N.H., *Union* of May 18 continues the story: "He was civic-minded and was vitally interested in the development of Rye Harbor and the New Hampshire seacoast. He had served for nearly 20 years as a member of the Rye Beach Precinct Commission and was a past president of the New Hampshire Seacoast Regional Development association, which he also helped to found. Last year he was elected as a member of the Constitutional Convention and in November was the unanimous choice of both the Democrats and Republicans for the General Court. In 1938 he was appointed to the New Hampshire Shore and Beach Preservation Commission by Gov. Francis P. Murphy. In addition he had served for a number of years as chairman of trust funds for the town of Rye and was a member of the local advisory committee of the National Rivers and Harbors committee. He was also a past president of the Rye Men's Club." Full accounts of the funeral service, together with stirring tributes, were published in the local and in prominent state papers. The service was held in the Bethany Congregational Church at Rye Center, N.H., and there was a large and notable attendance, including the Governor of the State, representatives from the State legislature, and many other state and local officials.

Mrs. Philbrick's letter continues: "Two of his sons are graduates of Harvard and the Harvard School of Business Administration; the oldest, Robert L., being associated with the accounting firm of T. Coleman Andrews in Richmond, Va., and the youngest, Shirley, Jr., manager of the Pacific Supply Company in San Francisco. He served in the Pacific area and is a lieutenant in the Naval Reserves. Both are married and have three children. Shirley's second son, Emmons, served in the Army for three years and is now indispensable on the home place. Ruth, our daughter, is the wife of Walter Jenkins, Associate Professor at Tulane University, New Orleans, and has two daughters." We are glad that Shirley and Helen attended the Golden Anniversary and this will be a happy memory for her and for all members of the Class.

Harold W. Jones has sent us a circular describing a mammoth undertaking, a new medical dictionary, in the preparation of which he served on the editorial board. This is the first completely new medical dictionary in 38 years. It is also the first medical dictionary to be compiled by an editorial board and a staff of contributors. The dictionary is being published by the Blakiston Company. We

congratulate our classmate for his part in a notable achievement. — We acknowledge with thanks letters from Arthur Blanchard, Jack Bleecker, Ernest Bragg, Lester Gardner, Frank Perry, and Mike Sears; and also a card from Charlie Hurter.

Arthur and Jean Blanchard left the East early in June to visit their children and grandchildren in California. His letter from Pasadena, though somewhat personal, contains matters of interest to all. We quote in part as follows: "I saw by clan notes that Frank Colcord lives hardly more than around the corner in San Marino, but his telephone is temporarily disconnected. Helen drove me through his street in a newer development. He has a very trim new house with grounds perfectly landscaped with shrubs and a profusion of flowers. A few days ago we drove Helen's sister-in-law down to La Jolla taking the inland route on the way down and driving to the top of Mt. Palomar (200-inch telescope). At La Jolla we looked up Howard Bodwell. He also has a tidy little bungalow with gorgeous flowers and looking out over the Pacific Ocean. His cronies came along after about 10 minutes to take him golfing. We would not let him wait because we had a long trip home ourselves. He and Mrs. Bodwell seem to be very happy in their lovely surroundings. Paul Johnson's widow died a month before we got here. Her sister, Carrie Foulke, is staying in the big house pending the settlement of the estate. The Bodwells said that they had visited back and forth with Frank Colcord and his wife."

Jack Bleecker, from West Chester, Pa., writes: "Am just recovering from two months in the hospital and am home after an operation on my plumbing; but am glad to say that I am able to be at work again." Brave heart, Jack, but be careful. From Ernest Bragg, Milford, Mass., we have the following interesting letter: "As is my custom, when *The Review* came, I turned at once to 1898 for class news. I was sorry to note the death of the classmate who was, perhaps, most intimately acquainted with me. We usually met on the train as both of us commuted daily. I refer to Fred Muhlig. Have never seen him since we were in classes although I have, occasionally, heard from him. I also noted the reference to the banquet given me by the church where I had served so many years. Being one of the people who cannot sit still, I have been working for more than a year on a history of the boot and shoe industry in Milford since 1795 when the first wholesale manufacturing was done. Turning to 1925 I was also interested to read the reference to my oldest son, Leslie B. Bragg."

Lester has been sick, perhaps due to the reaction after the tremendous effort of promoting and managing the Golden Anniversary. We were glad to learn from him that he has been feeling better and planned a vacation at Lake Sunapee, N.H. Write him a letter of good cheer and good will. If you have misplaced the directory, the address is 251 West 101st Street, New York 25, N.Y. — Frank Perry enclosed with his letter from Providence a blotter with a picture of a building, designed and construction supervised by his

company. — Mike Sears wrote from East Dennis, Mass., enclosing a check as a second installment on his pledge to the '98 capital gift fund and advising that he had been home a week from the hospital where he had undergone an operation. He was feeling a little weak but gaining strength every day. Thanks, Mike, for the check and we trust that by this time you have soundly convalesced.

Charlie Hurter's card from East Orleans, Mass., shows on one side a photo of a spacious and attractive residence and on the other side, the following message: "Finally got down here for the summer. New home address, 1303 N. Jackson Street, Wilmington, 12, Dela. Expect to be here until October 1. Glad to see you if you come this way." — Since the last installment of class notes, Ernest Bragg and Frank Colcord were in Boston and tried to call on the Secretary in his absence. Better luck next time, Ernest and Frank. And all you boys and girls of '98, be sure to call when you are passing through Boston.

Since the get-together at the Algonquin Club in June, our indefatigable Vice-president, Dan Edgerly, has been working industriously on class affairs, traveling extensively, and has deluged us with letters. Welcome deluge! Keep it up, Dan. In one letter, he writes: "When in New Hampshire, drove over to Rye Beach to see Mrs. Philbrick. She was not at home. Left a card stating that we had talked about Shirley at our class meeting." In another letter he encloses two pictures of buildings of the Babson Gravity Research Foundation at New Boston, N.H. He writes: "I have had a nice letter from Roger. A couple of excerpts have a humorous angle." Roger writes: "I am here to see how my latest baby is getting on. It is about ready to take off on the nursing bottle. I certainly hope to show M.I.T. professors that I am not crazy. When I am tempted to get dismayed in connection with gravity research, I remember that when in Technology our professor of Thermodynamics taught us that it would be impossible ever to make a heavier-than-air machine fly."

Other new addresses are: Dr. Harold W. Jones, 1303 Chichester Avenue, Orlando, Fla.; Bryce Metcalf, 2118 Massachusetts Avenue, Washington 8, D.C.; William W. Rush, 4430 Clayton Street, Denver, 16, Colo. — EDWARD S. CHAPIN, Secretary, 463 Commercial Street, Boston 13, Mass. JOSEPH C. RILEY, Assistant Secretary, 9 Pond View Avenue, Jamaica Plain, Mass.

• 1899 •

The 50th reunion has passed into history, but to those fortunate enough to attend it will not soon be forgotten. Where classmates had not met since graduation, face carvings by Father Time made mutual introductions necessary, but in other cases a whack on the back and "I'd know you anywhere" proved that old times were not forgotten.

The class luncheon, first of the class functions, was held at the Brookline Country Club. Present were: A. H. Brown, Carroll Brown, Churchill, Graves, Hamil-

ton, Herman, Kinsman, Newell, O'Hearn, Perkins, Rickards, Richmond, Sawyer, Sherrill, Skinner, C. A. Smith, Stearns, Taylor, Thompson (Mrs. Edna Chandler), Waddell, Walker, and Witherell. There were eight guests present including wives, sons, daughters and grandchildren who, with members, made a total of 30 in attendance.

It is a tradition that the 50-year class attend commencement in a body; so Friday morning, June 10, found us donning caps and gowns in the Massachusetts Avenue Armory, and thereafter joining in the procession to Rockwell Athletic Cage. We were given a position of honor just behind the speakers and faculty members and followed them upon the platform. Never, except in a wedding procession, did one feel so much like a goldfish. — Class Day exercises were held on Thursday afternoon in Walker Memorial. William Stark Newell was the 50-year speaker and gave a witty, inspiring talk.

At the President's luncheon, to which the Class was invited, the Class President and Secretary were honored with places at the head table. Greetings to the Class were responded to by Stark Newell. During the luncheon, Etheredge Walker of California, son of Amasa Walker, President of M.I.T. during the first two years we were in Technology, was cited as the classmate coming the longest distance to attend the 50th reunion.

The class dinner was held on Friday evening at the Hotel Sheraton, Boston. Arthur L. Hamilton, President, presided. Informality reigned and "a good time was had by all." At a side table a portfolio contained the professional records sent in for this purpose. Also, in a folder, were recent photographs which some members had sent in in response to a request. Miles Sherrill had thoughtfully provided a copy of the class portfolio so there was a chance to compare what we looked like then and now. Present at the dinner were: Bean, A. H. Brown, Carroll Brown, Churchill, Eaton, Glover, Graves, Hamilton, Herman, Kinsman, Mork, Morse, Newell, O'Hearn, Packard, Perkins, Priest, Pierce, Rickards, Richmond, Robinson, Sawyer, Sherrill, Skinner, C. A. Smith, Stearns, Taylor, Waddell, Walker, Witherell, and H. K. White, a total of 31. Leighton R. Rickards, M.I.T., '33, son of the Secretary was also present and helped his father with secretarial duties. A picture of those in attendance at this dinner appears on page 38 of this issue of *The Review*. On Saturday, the informal luncheon was held on the campus in Du Pont Court as usual with the 50-year class being served at its own table.

The Class met once more at the Alumni Dinner. The class gift, amounting to over \$16,000, was presented to the Institute by the Class President, Arthur Hamilton.

William Stark Newell, President of the Bath Iron Works, had a hair-raising experience as a passenger on a Northeast Airplane when it crash-landed at the Portland airport on August 11. Friction sparks set fire to the plane but the passengers were all safely evacuated through the coolness and presence of mind of the hostess. The Boston *Herald* for that date reports that Newell, finding his way

blocked by other passengers crowding the aisle, calmly went back for his brief case, and was the last one off, just before the entire plane burst into flame.

Ben Morse, II, of Canton, Mass., who was at the 50th reunion class dinner, died suddenly on August 6. For years he was associated with his father in the manufacture of Rising Sun Stove Polish. Ben retired when the family sold out its interest. Miles Sherrill says of him, "Ben did a great deal of good in this world, especially for the youth with whom he came in contact. He was a wonderful fellow."

William C. Phalen, V, died on May 27 at his home in Washington, D.C. Will Phalen was a native of Gloucester, Mass., and lived there during his years at Technology. For two years after graduation, he taught Chemistry at the New Mexico School of Mines, then returned to M.I.T. for graduate work and obtained his master's degree in 1902. He then secured a Ph.D. degree at George Washington University. For a time he was employed in the geological department of the National Museum in Washington; then going to the Geological Survey. Later he became geologist for the Solvay Company of Syracuse, where your Secretary had the pleasure of meeting him a number of times. After Will retired several years ago and removed to Washington, he retained the title of consulting geologist for that company. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston, Mass.

• 1900 •

Plans are in process for the golden anniversary reunion, including two days at the Cape, probably at East Bay Lodge where we have met so many times. In order to effect an organization to make all arrangements, a meeting of the Class was held at the Hotel Statler on the afternoon of June 11, prior to the Alumni dinner. Thirteen members were present: Allen, Comey, Fitch, Jackson, Lawley, Patch, Richardson, Russell, Silverman, C. E. Smith, Stearns, Walworth and Ziegler. It was agreed that we should hold our reunion at East Bay Lodge, if possible. The dates for the reunion were left open as the Alumni had not then determined the date of Alumni Day, 1950. This has since been settled as Monday, June 12. This leaves open the two days between Commencement Day, which is Friday, and Alumni Day on Monday. It is evident that our reunion should be held on these two days, Saturday and Sunday, June 10 and 11. There will be other important engagements for the Class both before and after these days. Information about these and all matters pertaining to the reunion will be given from time to time in this column and by special mailings to the Class.

Committee Chairmen for the reunion organization were elected at the class meeting as follows: Finance, Stanley Fitch; Class Gift, C. E. Smith; Publicity, George Russell; Hotel arrangements in Boston, Silverman; Automobile Transportation, Percy Ziegler; Train Transporta-

tion, C. E. Smith; Music and Entertainment, George Russell; Ladies Program, Mrs. C. E. Smith; Photography, Patch. As this was the first regularly called meeting of the Class since the death of Burt Cotting, the appointments of Elbert Allen as secretary and Stanley Fitch as assistant secretary and treasurer were confirmed. The matter of publishing a revised class book was discussed and decided in the negative. Prior to the class meeting, many of the same persons, together with Bob Leach and two business associates of Charlie Smith's and happily accompanied by Mrs. Smith and Mrs. Lawley, had lunch together at the Institute as part of the Alumni Day celebration. In the evening, 10 of us sat down together at the Alumni Banquet.

The call for the class meeting was sent to all members of the Class with known addresses. This brought several replies from those who were unable to attend. Charles Hughes wrote from Staten Island: "As to setting up an organization to plan for 50th golden anniversary, this seems to be a good idea. Perhaps a little booklet briefly outlining the activities of all members, including short accounts of experiences on jobs they have been on, would be of interest." Harry Chalmers wrote: "I would like to join the meeting and make plans for our 50th golden anniversary. In case you want any class news, I find that I have another grandson, Alan H. Chalmers, who was born today. I presume you are aware that I have two grandsons in Japan and two grandsons in Santa Barbara, and three grandsons in Huntington, L.I. I only have two granddaughters, one in Japan and one in Huntington. My daughter is soon to be back from Japan. I might add that my daughter by my second wife is engaged to be married and is now in Japan. Outside of these personal family matters, I have only to report that I am still endeavoring to collect from the various infringers of my patents some part of what is owed to me."

George Gibbs writes from St. Francis' Church in Chicago: "I have your letter about the 50th reunion of our Class. I am interested to know what you decide and also the date. This year I expect to be in the East in August. Shall be in Maine until approximately the 20th. Then in Boston (Cambridge) and New Bedford for a week. Next year I do not know when I shall be in the East. Hope I'll still be in this world. But I'll try to come. Do keep me informed. I'll be here until July 1, then in Alton, Ill., in charge of a parish for that month. Then in the East for August. I'll be here again about or after Labor Day. My best regards to all the members of the Class." — From Fred Everett: "I am, unless something breaks which I do not foresee, planning to be present at the 50th anniversary next year." From George Atwood in Brooklyn: "I shall not be able to be in Boston this month, but I hope you will call on me if there is anything I can do on this end to help make our 50th reunion the best of all. I am glad you are starting this a year ahead; it is wise to give every member plenty of time to make his plans for next year." And W. S. Hart from Montreal: "I

shall be glad to enter into the 50th reunion plans. We had a nice time at East Bay Lodge and I can think of no more satisfactory place to hold it. It was very attractive and pleasant to me. My active business life has diminished. Some private interests and hospital work I still carry on. Fortunately, my health has remained good."

Charlie Smith has retired as vice-president of the New Haven Railroad in charge of purchases and stores. It is announced however that he will remain as vice-president in charge of operations of the County Transportation Company, a subsidiary of the New Haven which operates local bus lines.

We have received word of the death on July 9 of Frank R. Walker. He was well known in architectural circles for the many important buildings which he designed in Cleveland as a partner in the firm of Walker and Weeks. He was born at Pittsfield, Mass., and after graduating from M.I.T. he went to Paris and Italy to study architecture. After several years in Boston, New York and Pittsburgh, he moved to Cleveland. There he worked on many of the city's largest and most important business, cultural and educational buildings. He served as professional adviser to the city planning commission and later was a member of the commission. He was also a consulting architect on Public Hall and the Cleveland Stadium. He was a past director of the chamber of commerce and a trustee of the Cleveland Engineering Society. Surviving are his widow, Catherine, and a daughter, Mrs. Joan Bessom of Marion, Ohio. — We also have received word of the deaths of Edmund H. Durgin, IX, of El Paso, Texas, on March 18; of Charles W. Hodsdon, II, of Roseville, Calif., on June 24; and of Karl Burroughs, X, on August 12. — ELBERT G. ALLEN, *Secretary*, 54 Bonad Road, West Newton 65, Mass.

• 1901 •

The following account of Guy Peterson's death and funeral has been received from Bob Williams: "A notice in the Boston Sunday *Herald* read: 'Plymouth, Sept. 17 — Guy C. Peterson, 69, of 788 Riverside Drive, New York, a telephone company engineer and secretary of the 1901 Class at M.I.T. died of a heart attack at Jordon Hospital to-night after his car hit a tree on Sandwich street. Peterson had spent the summer at the home of Sumner Jewett on Clifton street and that night had attended the annual dinner of the Plymouth Country Club. He left the dinner shortly after 9 P.M. to drive home. He leaves his wife, Mrs. Ada W. Peterson.'

"His death is a great loss to our Class and we shall all miss him sadly, he was such a lovable fellow. I drove down to Duxbury to the funeral. Ed Seaver, Roger Wight and Charles Bittinger were also there. Together with four of Guy's friends, we were honorary pall bearers. Phil Moore and Ed Seaver provided flowers from our Class. Guy retired five years ago from the American Telephone and Telegraph Company where he had spent 30 years. He was a member in the company's exclusive engineering club, The Pioneers, an honor which he very much treasured.

He was also a member of the M.I.T. Club of New York. He was a great golf enthusiast and spent his summers in Plymouth. Last August, Phil Moore invited Guy, Al Higgins and myself to luncheon at the New Ocean House in Swampscott to talk over our 50th reunion. Guy drove me down in his car and appeared to be in the best of health." — THEODORE H. TAFT, *Secretary*, Room 3-282, M.I.T., Cambridge 39, Mass.

• 1902 •

Since the last class notes there have been two gatherings of Technology men at which our members have seen one another in small groups or collectively; we refer to the Mid-Century Convocation and Alumni Day and Banquet. The convocation brought the men back but offered little opportunity for meeting one another except by chance. So far as can be gathered from various sources the following men were in attendance: Jason Mixter, Pember, Herbert May, Hunter, Grant Taylor, Williams, Adrian Sawyer, Philbrick, Proctor, Reynolds, Cates, Patch and Farley Gannett. Gannett and May have not been heard from for a long time and we would like to have had a chance to foregather with them. Last year your Secretary was on a business trip to Chicago on Alumni Day so missed out on both the luncheon and banquet; but Dan Patch reports that Bill Bassett, Ambrose Bourneuf, Bert Haskell, Fred Hunter, Jim Mahar, Lewis Moore, and Adrian Sawyer and himself sat down together at the banquet. Most of them had also been at some of the morning functions.

In July, Patch was on a job down in Miami and while there visited an old Spanish War comrade. During the visit another Spanish War vet came over, our classmate, Howard C. Judson. Judson, it will be recalled, later went into the Marines and is now retired with the rank of lieutenant colonel. He hopes to attend the 50th reunion and those who enjoyed his stories in 1937 at Oyster Harbor will look forward to meeting him again. He wishes that any '02 man coming to Miami would look him up.

Patch has also sent word regarding Ken Lockett, whom he tried to contact while in Chicago recently. At that time Lockett had just made a change in jobs and in a letter to Dan under date of August 22 writes: "I was terribly sorry that I missed you in Chicago. This move came quite suddenly and I came on here (Dixon, Ill.) leaving my sister in Chicago to pack up. The job is with the maintenance department of the Illinois State Highway Department. The district office at Dixon covers the ten counties up in the northwest corner of the state and I am kept busy driving almost all day, every day. My work with the government took me into every corner of Illinois so the territory is not new to me. I was very glad to hear from you and wish you would give my regards to any of the old crowd who remember me."

Lind's present address is Carbide and Chemical Corporation, Post Office Box P, Oak Ridge, Tenn. It will be recalled that he retired a short time ago from a professorship at the University of Minnesota.

A note in the June issue of *Civil Engineering* states that E. B. MacNaughton, chairman of the board of directors of the First National Bank of Portland, Ore., has been made interim president of Reed College. An illustration of the versatility of M.I.T. men; architect, banker, and educational executive.

There have been three deaths among men in our Class. Arthur R. G. Booth, V, died on May 16. Booth was for 40 years with the Massachusetts Department of Health in the water laboratory and was retired but a few years ago. He had resided in Raynham in his later years.

Allen D. Whipple, who was affiliated with the class, died on June 30. He had practiced as a consulting engineer in Chicago, where he lived at the time of his death. Through a clipping from the London *Times* we learn that John Russell Scott, chairman and governing director of the Manchester, England, *Guardian* and *Manchester Evening News*, died on April 5. Scott graduated from Trinity College, Cambridge, and then spent a year studying at Technology. He returned to England and joined his father, who controlled the *Guardian*, and in his turn carried on until he relinquished his active duties as managing director to his son in 1947 and became governing director. — BURTON G. PHILBRICK, *Secretary*, 246 Stuart Street, Boston 16, Mass.

• 1904 •

June seems a long time ago as these notes are being read but the memory of our 45-year reunion is still fresh in the minds of those who attended. The replies to our preliminary notice in February indicated that our total attendance, including wives, might reach 50 or more but a variety of causes prevented some from coming and the final roll call was only 26 men and eight wives.

The roster of attendance included: Anthony, F. A. Cobb, Curtis, Eager, Fairfield, Fellows, Hayden, Haynes, Hayward, Hiller, Holcombe, Kendall, Lang, Langley, Magnuson, Munster, G. P. Palmer, Parker, Phinney, Proudfoot, H. K. Richardson, E. H. Russell, A. D. Smith, Sutton, Whitaker, W. T. Wilson. The ladies present were: Mrs. Anthony, Mrs. Hayden, Mrs. Hayward, Mrs. Lang, Mrs. Langley, Mrs. Palmer, Mrs. Phinney and Mrs. Whitaker.

Hiller has established a permanent residence at Hyannis and Cap Curtis was summering nearby. Most of the others arrived on Friday. The weather was pleasant although a little on the warm side but this did not prevent the golf addicts from showing their prowess on the Wianno course. The ladies soon became acquainted and had a fine time together.

On Saturday night the men held a class meeting at which messages were read from a large number of classmates who couldn't attend. These were supplemented by various reports from men present. A fine letter was read from our Class Secretary, Henry Stevens, and several men reported on recent visits they had made to Steve. He is at Whitney Homestead, Stowe, Mass., and would be glad to see or hear from any members of the Class. A letter of greeting to Steve was written

and was signed by all present at the meeting. This letter was taken by Gus Munster and Cobb who presented it in person on their way home.

There was a brief discussion of our 50-year reunion which is just around the corner. Munster, Hiller and Sutton were appointed a committee of arrangements for this affair and Cy Ferris was appointed to head a committee of his own choosing to plan for the customary 50-year gift to the Institute. It was fun to get together again and when the party broke up Sunday it was the general opinion that it had been a great success.

Louis Bouscaren had at first intended to be present at the reunion but had to give it up. He is chairman of his district in the current M.I.T. fund-raising activities and with this, in addition to his regular duties, he is kept rather busy.

After more than 40 years with the financial end of Stone and Webster, Cy Ferris has stepped out of his vice-president's chair and has joined the rapidly growing ranks of the retired. Welcome, Cy, to this fraternity.

In connection with the correspondence regarding the reunion, it was learned that William F. Goodwin had died on December 5, 1948. He had been ill for two years with heart trouble. We were sorry to have had no earlier word of this.—Hubert Merryweather was in Boston to attend the big convocation and appeared to be in excellent health. We received word, however, that he died suddenly at his home near Bethlehem, Pa., on June 7 while operating his tractor. He had recently retired after many years in the mining department of the Bethlehem Steel Company where he had risen to become general manager of ore properties. Mrs. Merryweather has the deep sympathy of the Class.

Another Course III man, Fremont N. Turgeon, died at his home in East Brookfield, Mass., the last of June. After getting his degree, he practiced mining for a few years but that life did not appeal to him and he bought a dairy farm in East Brookfield where he remained until his death. He took an interest in town affairs and served as town treasurer for 21 years and selectman for 14 years. He also served several terms on the school committee. This is quite a record and Turgie will be missed in his community as well as by his Class. He is survived by his wife and three daughters, all of East Brookfield.—Another belated report of the death of a classmate concerns James W. Cobb of Greenfield who passed away on September 1, 1939. No details are available.

The condition of our class treasury is greatly improved as a result of our appeal last spring but if some of you who didn't contribute would like to send a modest check, it would not be declined.—EUGENE H. RUSSELL, JR., 82 Devonshire Street, Boston, Mass. CARLE R. HAYWARD, Room 8-109, M.I.T., Cambridge 39, Mass.

• 1905 •

First as to plans for our 45th reunion next June. Seventy fellows returned their questionnaires. Cape Cod was favored by a majority, with a mid-point on the Con-

necticut Shore a fairly close second. A very few favored a hotel or country club near Boston. Inclusion of the ladies was favored by a big majority. As to date, this has been pretty well determined for us as the Alumni Association has set the date of Monday, June 12 for Alumni Day and since a large majority favored the dates of June 9, 10 and 11, that's probably the date depending only upon the availability of the desirable hostelry. Bill Ball has consented to take the chairmanship of the reunion committee and is busy investigating available places. By the time of the next issue, the date and place of the reunion will, undoubtedly, be determined.

On Alumni Day, 1949, were seen Andrew and Mrs. Fisher, Sam and Mrs. Shapira, Bob McLean, Gil Joslin, Art Balkam, your Secretary, wife and three daughters. Four of us attended the Alumni Dinner in the evening.

At long last, Jack Flynn, II, writes from Buenos Aires as follows: "I am still hitting on all cylinders (*Gracias a Dios!*) working 9 to 10 hours a day but at work that's pleasant. I seem to have dug myself in here, having spent the better part of 20 years in South America. Last year I turned 65 and in strict accord with inviolate custom in the steel business I retired on July 31 as director and general manager of Armco Argentina. To use up leisure time (and to make a necessary living), I formed the corporation whose signal flies at the mast head above—I.P.S.A.M.—our job is making steel barrels. We have the best shop in Argentina and just now in production and, so far, going fine. I am president of Porcelana Americana, China-ware manufacturing, and director of Grafex S.A., paper and printing machinery, inks, paints, and so forth. All is going well, and as I bragged earlier in this letter, I, too. We have a grand group of M.I.T. Alumni in Argentina; lunch together once a month and generally 25 or 30 gather at American Club in Buenos Aires. I am the oldest grad and insist on that honor. There seems to be a chance, now that I am boss man in all these jobs, that I can route myself up your way next year. I surely want to see you all, click steins again and tell tall tales with the boys."

George M. Bartlett (Piggy to you), as previously reported, retired some months ago at Campbell Soup, but as consultant lingers on with apparent contentment on both sides. He reports that he and Mrs. Bartlett are in general good health, have one son, Thomas L., and a daughter-in-law and grandson now approximately one and one-half years old. They all manage to spend a few weeks each summer on Cape Cod. Frank Chesterman, back at his farm in Hampton Falls, N.H., from a trip to Honolulu, reports having seen Pete Harvey in Los Angeles and has promised a personal report as soon as he can leave the farm long enough to get to Boston. Ray White says: "Frank says he's a farmer but don't believe it. Farmers don't take trips to the Pacific Islands." You'll have to drive your tractor up to the front door of Alden Manor, Frank, to make Ray believe it.

Walt Whittemore, III, has given us a new address, nothing more, at 3902 Drake

Street, Houston 5, Texas. He hasn't answered my letter asking for details, but my guess is that a daughter and grandchildren in Houston were the magnets. Gene and Mrs. Kriegsmann made an official call on the Secretary in July, reporting a very happy trip through Nova Scotia. They are both in governmental service in Washington, D.C., and Gene was really rejoicing at the mammoth road building plans in progress. They reported that O. C. Merrill had been seriously incapacitated for some time. In answer to my letter Mrs. Merrill writes that O. C. is suffering from arteriosclerosis complicated by a stroke which occurred in June, 1948, and that the outlook is not optimistic.

Chester Allen, I, writes from his new address Post Office Box 10, Potsdam, N.Y.: "Your letter of the 9th threatening to get out some scandal against me really scared me, so to avoid that I am going to tell you a little about myself and what has happened to me in recent years. I retired on July 1 from the chairmanship of the department of Civil Engineering at the Michigan State College, a position I held for 30 years. The next year will be a sabbatical year and it will also begin a 'post-retirement' appointment at Clarkson College of Technology. I remarried in 1941 (my first wife having died in 1936) Elizabeth Brown, and together we have six children and six grandchildren, the family being scattered from here to the Pacific Coast. My career, I regret to say, has been far from spectacular and my honors, such as they are, quite modest ones. Whenever I read the alumni news about what has been done by some of the M.I.T. graduates I get an inferiority complex at least temporarily, but there is, after all, something to be proud of in belonging to a group that includes such distinguished men as our Alumni. The celebration put on at M.I.T. last April was enough to make any alumni proud of the Institute." Carroll Curtis, IX, has for the past four years been personnel manager for the Burrows Corporation in Portland, Maine. He lives at the Hotel Falmouth during the winter, spends four summer months at his cottage at Peaks Island, Portland Harbor. He has three children, all married, and has three grandchildren. Carroll hopes that anyone going through Portland will look him up.

Through Mrs. Wesley Gilman we learn that Gilly suffered a cardiac attack in June, 1948, and has been in a rather serious condition since. However, we hope to see Gilly and Mrs. Gilman at many more reunions. Walter G. Eichler, II, reported last year as having retired from the Ludlow Company, has made a permanent home at Harwichport, Mass., Box 484. Thanks to Ros Davis, who sends us quite regularly clippings from New York papers. We, thusly, learn that our class economist and former class president, Norman Lombard, is doing research on a novel idea in finance. We quote from a New York paper: "Over the opposition of some professional analysts and financial forecasters, a new venture of psychological market research has made its appearance in New York. The organization contends individuals make the markets what they are by

their opinions and feelings, rather than cold resistance points, technical reactions and previous lows and highs. There has been a need for such a practical experiment probing into investor psychology for some time, particularly in this age where psychiatry has not only become accepted, but enjoys wide practical application. . . . So far results have been fairly good, Mr. Lombard said yesterday. He described the accumulating experience as 'intriguing' and mentioned that there has been a natural bias on the optimistic side by many who want stocks to go up. . . ."

Clarence Gage, II, one of your best correspondents, permanently located in his retirement in St. Petersburg, after detailing enough operations, illnesses, diets, and so on, to discourage the ordinary man, says: "Come to St. Petersburg and live ten years longer." However, he insists that he will be at the 45th reunion. A postal card postmarked Dublin, Ireland, has been received from Hub Kenway with the mere notation that he was there to collect his stake in the Irish Sweepstakes. He hasn't been around since his return to share the spoils. Bertrand L. Johnson, III, sends another reprint from the United States Bureau of Mines' *Minerals Yearbook* containing his most recent report on Potash. Percy Goodale keeps marching on in the annual father and son golf tournament. This year he played in his 29th competition, playing a round with each of his sons, Bob and Ben, and then a round with each of Bob's sons, Jim, 16, and Tom, 12, the latter two in the grandfather and grandson division.

And now comes the saddest part of your Secretary's duties; the chronicling of deaths of classmates. Galt F. Parsons, VI, died at a hospital in Concord, Mass., on May 25. G. F. was widely known as a power sales engineer, the last 15 years with the New England Power Company. He had been in failing health for several years, but had pluckily carried on his duties until near the end. He leaves besides his wife, a son Frank, of Lexington, Mass., where the family had lived for many years. On June 6 at Winnetka, Ill., Joe Brown, II, passed away. This will come as a special shock to those who reunited with Joe for the past two or three years as he had seemed in splendid health and spirits. Besides a wife, Joe left a daughter, living in Pittsburgh, and three grandchildren. Few persons leave the physical monuments to their memory that George C. Funk, IV, left when he passed away on June 13. Sid Strickland, at our request, wrote as follows: "The first thing of importance which he designed was the Brookline Fire Station. Everyone going through Brookline on Route One passes this splendid building. Later on, he was the architect of the Arena, Boston. Here he evolved a method for freezing ice, over the regular floor, for ice hockey. This invention was accountable for his being selected as architect for the Manger Hotel and the Boston Garden. George's ability to plan was witnessed by many Technology men when Winston Churchill was in Boston and spoke at the Garden. Following his address the ease with which this building was vacated, without jostling or pushing, was an indication of his

knowledge of planning in this field. The funeral service, the 16th of June, at Eastman's on Beacon Street, was a man's affair — an acknowledgment of what he had done for sports." Besides, he was associate architect in the design of Madison Square Garden, New York City, designed and was general manager and director of the Revere Racing Association and the Wonderland Dogtrack in Revere.

Bob Gardner, XIII, salvage master of the navy tug *Viking*, operated by Merritt, Chapman, Scott Corporation, succumbed to a heart attack while cleaning his car at his home in San Diego on October 10, 1948. Bob had been with this salvage firm for about 35 years and had worked on numerous major salvage operations on the West Coast. One of his biggest jobs was in 1930 when he got the Richfield tanker *Tamaiku* off Pigeon Point where it had been aground for 26 days. You will be interested in two letters, one from Mrs. Gardner, the other from Frank Payne, parts of which we quote: "Your letter of June 14 was forwarded to me here in New London. I am deeply grateful for your expression of sympathy and your kind reference to my beloved Bob. I am sorry you were not notified of the time of his passing but it was, of course, impossible for me to send word to all our friends. I am glad you had a fairly recent letter, a year ago this spring, I believe, which Bob wrote to you or someone of the Class, bringing you pretty nearly up to date as to his activities. Bob was still salvage officer on the *Viking* at the time of his passing. He had had an enlargement of the heart for quite some time, but was under a physician's care but a few months. He had 'slowed up' much to his annoyance but had responded well to medicine and was leading a fairly normal life, with never a sick day. His so sudden passing was all the greater shock to family and friends for that reason. I can readily understand why Bob was so respected and loved by all the members of his Class; all through his life he endeared himself to a countless host of friends and his death brought to me and our son, Stephen, many wonderful tributes. As for our own great loss it is impossible to describe." Frank's letter was written several months after Bob's death, but it is so typical of the Bob we knew at M.I.T.: "About a year ago when I was in California, I went aboard the *Viking* and there was Bob Gardner, wreck master. If I could have placed a fringe of whiskers on Bob's face and chin, you would have had a typical American captain of a sailing ship from New England in the days of 1850. In Bob's cabin, besides the bunk and the work table, was a complete set of good old books on algebra, mathematics and Naval architecture, that we had back in 1905. These books were pretty well thumbed over in those days but I believe Bob never looked at them since for reference. Bob took us all over the ship and showed us the equipment which he had for use in salvaging a destroyer or an L.S.T. or a steel freighter, anything that might sink on the Pacific Coast. At the time, I thought Bob was very happy in his work and probably was serving the government better than any other man in the Class. We had lunch with the crew that day and one

could see that Captain Gardner was beloved by all. We had hardly finished our lunch when Bob got a wireless that the *Viking* was needed off the coast of Mexico about 700 miles — emergency voyage. He made a call to his wife on Point Loma to say goodbye. He couldn't tell when he would be back. I saw the *Viking* disappear in the distance with the old smoke coming out of its funnel, headed south. I knew that Bob would do a job when he got to the destination. Bob has passed on but I can still see him standing there on the bridge of the *Viking* saying, 'Au revoir, goodbye and good luck.' He was a wonderful fellow and, like in the days of 1905 when Bob was not afraid to tackle a half-dozen Harvard men bigger than he was in those Technology fights on Boylston Street, Bob retained always that youthful, fighting spirit up to the last days as wreck master of the *Viking*. A real fellow of whom our Class of 1905 should be proud."

Charles Field, V, died at Virginia Beach, Va., on June 17. No obituary or details are at hand but Charlie Johnston responded with the statement that he had met him in connection with meetings in the Diocese of southern Virginia, where he was, somehow, in charge of a small Episcopal Mission Church in Portsmouth. Charlie hoped to get further details later. Rev. H. Lewis Hardy, I, about whom we carried quite a story last year, died at his parish at Monmouth, Maine, on June 14. The story was of this fellow, who had been in the railroad game for most of his life, finally taking a theological course and accepting a pastorate in this little town in Maine. It is almost psychic the things some of our classmates wrote for the Ten-Year Book. Hardy wrote, in part: "the possession of a modest home, presided over by the best of wives, and an active share in the work of the Church of Jesus Christ have brought to me a happiness that I would not exchange for the most meteoric career in the business world today." — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. SIDNEY T. STRICKLAND, *Assistant Secretary*, 69 Newbury Street, Boston, Mass.

• 1906 •

The Class was very well represented at the Alumni Day held on June 11. Ten were present at the luncheon in Cambridge, including two wives, Mrs. Darling and Mrs. Wight. The stags attending were: Bill Abbott, Stewart Coey, Tom Hinckley, Charlie Kasson, Andy Kerr and your Secretary. The group spent the afternoon inspecting the new dormitory and lolling about the roof of the dining room with its fine view of the Charles River. The banquet at the Statler was attended by seven members of the Class including Henry Ginsburg who was not present at the luncheon. Coey, Kasson and Kerr did not stay for the banquet. The Assistant Secretary, who has been unusually faithful about attending such affairs, was prevented from being present by another engagement. Ralph Patch had expressed his intention of coming but developed a cold which kept him away. Ralph advised that for the first time in a number of years he was not spending the summer on Cape

Cod but was looking forward to numerous automobile trips to other sections of New England.

A letter is acknowledged from Robert E. Cushman, II, dated at Portland, Oregon, May 26, which reads as follows: "Just a note for The Review to state that I am retired from the field of active engineering, to take effect on June 1. My hobby is taking colored movies, and here in Oregon there is ample opportunity for that recreation. We also have three young grandchildren, excellent and willing subjects for portraiture. I look forward to every issue of The Review and always turn to '06 items before reading the balance of the articles. Should any of our group pass through Portland they will be very welcome visitors." On stationery of the Cunard White Star R.M.S. *Mauretania* dated June 1, the following was received from the Sherman Chases: "The above inscription will explain why I am not going to be at Alumni Day this week. Mrs. C and I left New York a week ago for a brief visit to England and the Continent. We fly back to Boston from Glasgow on the Fourth of July. I am attending a meeting of the Institution of Water Engineers at Buxton the middle of the month, then we are going over to Switzerland for a while, then fly back to London from Paris. Back in England we hire a small car and tour Devon and Cornwall before going to Scotland. Part of my time in England I will be looking at engineering works, with some of my English friends among the engineers. Our passage has been smooth and uneventful. Have just left LeHavre where we had our first view of the effect of war bombing." The Secretary and Mrs. Kidder spent the first week in August at Centerville on Cape Cod. While there we made a call at W. G. Abbott's summer place at West Falmouth and were disappointed to find them not at home. A few days later a note was received from W. G. advising us that the day we stopped was one of those few times that he had been away for more than a few hours. Abbott enclosed a few snapshots taken at the reunion in June which we will add to the collection to be exhibited at the next five-year reunion.

Thanks are due Andy Fisher '05 for a note to the effect that he heard Harold Coes was "top dog" with Hoffman in Paris. Readers may recall that we quoted a letter from Harold in the May Review stating that he had been offered a position with the Economic Co-operation Administration in Europe. Under date of July 25 the following letter was received from Harold which I know classmates will find extremely interesting: "As you know, I retired from active service with our firm, Ford, Bacon and Davis a year ago. That seems to have been a mistake, for immediately agencies of the United States Government wanted me. I declined all of the invitations. Then Paul Hoffman, Administrator of the Economic Co-operation Administration, came to my office in New York and put in such a strong plea for assistance to the European headquarters, the office of the special representative in Paris, that I yielded and here I am, as acting director of the industry division. I came over in May to be consultant to George

Perkins, the director. President Truman appointed Mr. Perkins as assistant secretary of state for western European affairs, and he left for the United States about the middle of June. Thereupon, Ambassador Harriman, who heads up the operations in Europe, asked me to take over Perkins' job. The work is fascinating for one is dealing with the economies of all the countries participating in the Marshall Plan for European recovery. Great strides have been made; a great deal more yet to be done. But I have faith it will be done, for everywhere the Marshall Plan was put into operation it stopped the Communists. That is the main reason I agreed to come over here for a year. I had two sons in the active theaters of war in Europe. I have two grandsons I don't want to see get into another war. So, to the extent that Grandpa can go to work to help protect their future and the sons and grandsons of people everywhere that hate war, then Grandpa will feel that his activities in his declining years have been worth-while. Recently, I had an invitation from the Government of Ceylon to come there for two months as consultant to assist the government in developing a basic plan for industrialization of Ceylon. I presume this invitation was due to the work I did for the Government of India several years ago. Of course I had to decline on account of the work here. Agnes is here with me and we are living at the St. James Hotel, about ten minutes walk from my office."

In previous editions we have had occasion to refer to the Bell System's retirement plan. On Wednesday, September 7, a reception was held at the University Club, New York City, for Otto Blackwell, who is retiring as assistant vice-president of the American Telephone and Telegraph Company. Otto has had a long and distinguished career in the Bell System from the time he started in the engineering department on Milk Street, Boston, through the development and research department of the A.T. and T. Company, and then with Bell Telephone Laboratories where he was vice-president before being transferred to 195 Broadway to take the position which he held at the time of his retirement.

The following was received from Abe Sherman dated July 22: "I know that you will be interested in the enclosed clipping from a recent issue of the Sarasota, Fla., paper. I see Walter occasionally in the winter." I quote from the clipping: "Walter N. Munroe, western division manager of the Florida Power & Light Company for nearly 25 years and a pioneer in the development of the west coast area, is to retire August 1, he announced Saturday. He plans to spend the following three months on a vacation in North Carolina and return to his Crescent Beach home here in the fall. Coming to Florida from Texas where he had distinguished himself in the electric utility field, Munroe became an early booster for the west coast area and helped in the organization of the Florida Power & Light Company. Because of his belief in the progress of this area, Munroe was named western division manager when the power company was incorporated in 1925. With the exception of a period when he lived in Lakeland, Mun-

roe has made his home in Sarasota, where his firm has maintained its headquarters for this district, embracing the area between Bradenton and Naples and covering Lakeland as well. Active in both civic and business affairs, Munroe became widely known through this district. R. H. Fite, company vice president in Miami praised the retiring executive for his 'outstanding work' during nearly a quarter-century with the power company. Both Mr. and Mrs. Munroe are members of the Episcopal Church of the Redeemer which he has served as both junior and senior warden. Mrs. Munroe formerly was Becky Golay of Dallas, Texas, where they were married while Munroe was with the Texas Co. They have two grown children, one of whom, James, is a division engineer with the Power Company located in Lake City."

Notices have been received of the deaths of three members of the class: William A. Hardy, II; Ishwar D. Varshnei, X; and John E. Simmons, X. Hardy was born in Andover, Mass., in 1885 and studied Mechanical Engineering, graduating from Course II. In 1910 he obtained the degree of master of patent law from George Washington University. In 1912 he became a patent attorney with the Thomas A. Edison Company, Inc., at West Orange, N.J., which position he held until his death. He resided in East Orange, but passed away at the Mary Hitchcock Memorial Hospital, Hanover, N.H., on July 10. He had just taken his family to their summer home in Marlboro, N.H., when he became ill. — Varshnei, one of the Indian students at Technology, was managing agent of the United Provinces Glass Works, Ltd., at Bahjoi, India. As far as known Varshnei had not been back to this country since leaving the Institute. He died on October 12, 1948, but word of this has just been received. — Simmons was associated with Course X at the Institute and, as far as known, had spent most of his life in the vicinity of Boston. At the time of his death on February 5, he resided in Medford, Mass. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills, 82, Mass.

• 1907 •

For the fifth successive time, Oyster Harbors Club at Osterville, Mass., on the southern shore of Cape Cod, was the scene of a two-day reunion of members of our Class. Officially beginning on the afternoon of Friday, June 24, and ending after dinner on Sunday, June 26, our 42d-year gathering, blessed with hot but pleasant weather, was enthusiastically voted a delightful success by all of the 39 following men who were present for at least a part of the 48 hours: Ernest Altgelt, Dick Ashenden, Cecil Baker, Clinton Barker, Howard Chase, George Crane, Allan Cullimore, Leverett Cutten, Parker Dodge, John Frank, Louis Freedman, Tom Gould, Ralph N. Hall, Hud Hastings, Bebe Hosmer, Roy Lindsay, Frank MacGregor, Milton MacGregor, Alexander Macomber, Hermann Mahr, Henry Martin, Sam Marx, Harry Moody, Bryant

Nichols, Tucky Noyes, Maurice Pease, Bob Rand, Don Robbins, Merton Sage, Molly Scharff (M.I.T., '09), Gilbert Small, Oscar Starkweather, Phelps Swett, Chet Vose, Willis Waldo, Phil Walker, John West (Harvard, '07, a warm friend of some of us and a usual attendant at our reunions), Edbert Wilson, and Harold Wonson. For Altgelt, Baker, Dodge, Pease, Sage, and Wilson, this was the first experience in attending one of our reunions, but they all asserted vigorously that, God willing, it will not be their last.

One of the nice things about carrying on one of our reunions is that it is not necessary to plan any elaborate program to provide entertainment. Most of the men are completely content to enjoy the delicious food served in the most courteous and efficient manner imaginable, the homelike and attractive bedrooms, the spacious and beautifully furnished living rooms and porches, the lovely gardens, lawns, and views of the bay, all of which the club house affords; combined with chatting in a reminiscent vein or with forward-looking interest with classmates, some of whom they may not have seen since 1907. A few of the fellows under the helpful leadership of Dick Ashenden played golf on the very fine course, and several of us took advantage of the opportunity afforded for delightful trips along the shore in a power boat on the Saturday morning and afternoon. A few hardy souls patronized the bathing beach, at least in bathing suits, and automobile rides and walks in the charming combination of countryside and seaside which the location provides were frequent.

On the Saturday evening of our reunion, following the taking of a group photograph, all of us ate together for our class dinner and then adjourned to one of the parlors for our class meeting with Alexander Macomber presiding in his usual happy and efficient manner. Mr. Wilde of the M.I.T. Photographic Service was on hand to show the colored film, "M.I.T. in 1948," together with a film taken during Technology's Mid-Century Convocation of last spring. As your class secretary, I read greetings from classmates unable to be present, reported on deaths of '07 men since our June, 1947, reunion, presented a few facts and figures relating to the Alumni Fund with particular reference to our own class participation in it, and opened up discussion regarding future reunions. Harold Wonson presented a financial statement showing that we had a substantial balance in our class treasury. Phil Walker showed some moving pictures of classmates that he took at our 1947 and 1942 reunions, and we called it an evening.

It was the unanimous opinion of the men present at this class meeting that we should hold our next reunion in 1952 on a week end during June, and most definitely at Oyster Harbors Club. Tentative reservations have already been made. It was also voted that in the future efforts should be made to have occasional gatherings of '07 men who are located in what may be called "the New York City area." I was instructed to prepare a list representing men who should be notified of such gatherings, and to see to it that dinners or

other types of meetings are planned. It developed that the first of such affairs took place much sooner than any of us had expected, due to the gracious enterprise of Merton Sage, who, learning that I was to be on Long Island, New York, during July, arranged an '07 luncheon in my honor at the Waldorf Astoria on July 12. Present at this event with me were Arnold, Fales, Freedman, Jansson, Kinneer, Lewis, Lucey, Moody, Pastoriza, Sage, and Whittemore. We had a delightful time and all agreed that future get-togethers must be held. I have prepared a list of those to whom we propose to send notices of meetings, and have sent copies of it, together with a letter, to all the men whose names are included. Merton Sage will be key man to arrange for such affairs.

In planning the financial end of our reunions, we never seek to make a profit but we do want to come out even. It is gratifying to report, therefore, that in spite of the relatively small attendance at our 1949 gathering we had receipts above expenditures of \$52.28, our receipts, from registrations paid, being \$1,141.50, and our expenditures, for publicity plus cost at Oyster Harbors Club, \$1,089.22.

The total number of men ever considered by the Alumni Office to be '07 men is 511. Of that number I now have addresses of 315; 150 or 29.4 per cent are known to be dead, and I know nothing at all about 46. Of our 209 graduates, 55, or 26.3 per cent, have died. I have 212 names now on my mailing list. The following men died between June of 1947 and June of 1949: J. P. Alvey, Charlie Coffin, Llewellyn Davenport, W. E. Kershaw, Kenneth Major, Henry McRae, H. J. Morton, Octavus Peabody, Theodore Smith, George R. Taylor, and Johnnie Thomas.

Within four weeks after our reunion I had to add another name to our list of deceased '07 men. During the forenoon of July 22 the secretary to Harold Wonson telephoned to me saying that Harold had been found dead at the wheel of his car that he was driving to his office at Commonwealth Shoe and Leather Company in Whitman, Mass., that very morning, the victim of a heart attack. Harold had been in poor health for several years, having spent many months in hospitals for treatment of heart and other organic troubles; so I was not altogether surprised to receive this news, although, of course, it was a shock because Harold and I roomed together at our reunion at Oyster Harbors Club and on both Friday and Saturdays evenings we sat on the porch connected with our room until midnight or after chatting, and he seemed to be feeling quite well. His passing was to me not only the loss of a loyal and active classmate who as class treasurer during recent years was my very efficient collaborator in class affairs, but also the loss of one of the very few intimate friends I have ever had. He was best man at my wedding in 1909 and later I "stood up" with him when he was married. He was a man of exemplary character, a devoted husband and father, a successful businessman, and always an extremely popular member of '07. From 1907 to 1910 he was an assistant in naval architecture at the

Institute, and then became an executive with the W. H. McElwain Company, shoe manufacturers. In June, 1916, he was given a leave of absence and went to the Mexican border as a captain in the United States Army, later being advanced to the ranks of major and lieutenant colonel. In January, 1919, he returned to the McElwain Company as manager of their sole leather department. In 1927 he became manager of the eastern sole leather division of the International Shoe Company, leaving them in July, 1930, to become comptroller with the Commonwealth Shoe and Leather Company, and for several years he has been treasurer and a director of this concern. He was a former president of the New England Shoe and Leather Association, a director of the Bridgewater, Mass., Savings Bank, and a member of Central Square Congregational Church of Bridgewater. He is survived by his wife, Ruth, of 93 South Street, Bridgewater, two married daughters, a son, Harold S., Jr., of Minneapolis, and a married sister of Gloucester, Mass., which was Harold's home town. On behalf of the Class I had a sympathy bouquet of roses sent to Ruth as soon as I learned of the death. The funeral was at the church, of which he was a member, on July 24. It was impossible for me to attend, and Alexander Macomber represented our Class.

Llewellyn D. Davenport, associated with our Class in Course I, died on October 16, 1948, but I did not learn of this until June of this year. From 1907 to 1920 he served successively as engineer, shift boss, night foreman in open pit, assistant chief engineer, and chief engineer with the Oliver Iron Mining Company, Mesabi Range at Hibbing, Minn. He did an outstanding job there in directing the moving of the town a distance of about one and a half miles to allow mining of the town site. During 1921 to 1924 he spent 28 months in Manchuria as consulting engineer for the South Manchuria Railway Company, where he directed the moving of a town to uncover a coal deposit and made a detail 20-year mining plan for the largest coal mine in the world at Fushun, South Manchuria. During recent years he has been a consulting engineer with his home at Hope Ranch, Santa Barbara, Calif.

Theodore L. Smith, II, died suddenly on June 16, 1949, at his home, 61 Main Street, Concord, Mass. He was 71 years old, having entered the Institute several years later in life than most of us. He was a veteran of the Spanish American War and maintained his interest in military affairs all his life. From 1907 till 1918 he worked in various capacities for the American Locomotive Company and then became production manager for the Gillette Safety Razor Company. During the past 18 years he was engaged in research work for this concern. He is survived by his wife, two sons, and a daughter.

Following Harold Wonson's death, Alexander Macomber and I appointed Philip B. Walker of Whitinsville, Mass., as treasurer of our Class. All class records and accounts are now in Phil's possession, and he is recognized as treasurer by the bank where our class funds are on deposit. It may look as though the little village of

Whitinsville is pretty much directing the affairs of our Class, but Phil is thoroughly efficient, a loyal '07 man, and a warm friend of mine whom I see daily in connection with business and community activities, so that we can very conveniently work together in class matters.

Ernest Altgelt, who traveled from Texas to attend our reunion last June, is a consulting engineer on problems of underground water, structural geology, and irrigation. Address, Route 8, Box 252, San Antonio 1. — When in New York City last July, I called on E. Dexter Boles, our major of freshman drill days, at his office at 126 West 54th Street. He is chief engineer of power and assistant general superintendent of the New York City Transit Commission, of the Board of Transportation, which means that he has charge of all power of city controlled or operated transportation systems. Dexter looks well, not as heavy as in undergraduate days, has the same suave and gracious manner that always characterized him. He told me that for 20 years after 1907 he was with the General Electric Company, traveling extensively for them in Europe and in India and other parts of Asia. In 1919 he was admitted to the bar. He is married, has no children, lives in Manhattan. — Lawrence C. Hampton, 1211 Adair Street, San Marino 9, Calif., describes his occupation as realtor and business opportunity broker. — Tom Keeling, who is president of the Nashville Machine and Supply Company, 123 Third Avenue N., Nashville 3, Tenn., in sending me his regrets at his inability to attend our reunion of last June, said that on September 18, 1946, he suffered a heart attack (acute coronary occlusion) while playing golf in southwest North Carolina. He recovered fairly well but had another attack on October 10, 1948. He now is able to get around but has to be careful.

Jack Kinnear, Vice-president of the Kennecott Copper Corporation with office at 120 Broadway, New York, delivered the commencement address at the University of Nevada on June 6 and had the degree of doctor of laws conferred upon him. He has told me that he has not solved the problem as to why such a degree should be conferred upon a mining engineer! — Our June reunion was lacking in a certain usual spiciness due to the absence of Stud Leavell who flew from New York on June 10 directly to Czechoslovakia to begin some rather extensive travel in parts of Europe. — I was pleased to receive last August from Frederic Menner, XIII, a message telling me something of his doings since 1907. After a year in the engineering department of the Electric Boat Company (submarines) at Quincy, Mass., he worked as assistant superintendent of general promotion and sales for the Gillette Safety Razor Company until January of 1913. Then followed about a year and a half as assistant to the president at the St. Louis Packard automobile agency and in August of 1914 he became works engineering manager of the mills of the Scullin Steel Company at St. Louis. From February of 1923 until October of 1946 he had his own office as a consulting engineer in St. Louis. At that time he closed his office and moved to Santa Bar-

bara, Calif., because of the illness of his wife. His address is 211 Alston Road. He writes that he is a registered engineer in Missouri and in California but is not now actively engaged in the profession. Fred has no children.

An article in the Boston *Herald* of August 25, 1949, stated that plans to distribute in New England by late 1950 natural gas from the oil fields of Texas and Louisiana had been announced by the newly formed Northeastern Gas Transmission Company. Our Class President, Alexander Macomber, is chairman of the board of this new company. — At the luncheon at the Waldorf-Astoria last July 12, mentioned previously in these notes, I sat beside J. Damon Whittemore, VI, Vice-president in charge of the public utilities department of the Chase National Bank at 18 Pine Street, New York City. I never knew Damon at all well during undergraduate days, had not seen him for 42 years, and was particularly happy after all this time to become at least slightly acquainted with him. He was with the General Electric Company and certain public utility companies until 1939, and has been with the bank since then. He has been to China and Japan as a public utility expert on various occasions and was on General MacArthur's staff in Japan following the time when Ed Moreland of our Class was there after the Japanese surrender, to assist and advise in monetary matters. He is married and has a son and a daughter.

I have much more material available for these notes — an unusual situation for a class secretary — but have used '07's share of space in this issue and will hold the rest for the December issue. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1908 •

The first get-together bimonthly dinner and meeting of the 1949-1950 season will be held on Tuesday, November 15, at 6 P.M., probably in the Silver Room, Walker Memorial. Reply post cards will be mailed as usual. Please plan now to attend so news of the past summer can be talked over and plans for our 42d next summer can be considered. We will probably have some movies or Kodachromes to show.

George D. Whittle has joined the staff of the Division of San Francisco Bay Toll Crossings, California Department of Public Works, as special assistant to the chief engineer with the title of principal engineer. The division is planning a second bridge across San Francisco Bay to supplement the bridge completed in 1936. George retired from the Public Roads Administration after service of 31 years. He writes that he enjoyed meeting so many of the fellows a year ago at our 40th reunion.

Henry Sewell and his wife announce the marriage of their daughter, Lucie, to Lauriston Calvert Marshall which took place on August 20. Dr. Marshall is professor of Electrical Engineering at the University of California. Lucie graduated from Smith College in 1941.

Clark University awarded the honorary degree of doctor of science to Charles Au-

gust Kraus in May. Through 50 years of active research he has attained rank as an internationally recognized world leader in physical chemistry. He has been director of chemical research at Clark University for 10 years and for 25 years at Brown University.

We regret to announce the deaths of three classmates: those of Loyd H. Sutton which occurred on July 23; Lynn S. Goodman on July 27; and Francis M. Bond on June 2. Sutton was a prominent patent attorney and professor of law, and had been a former president of the American Patent Law Association and a member of the District Bar Association, Washington, D.C. Goodman was a retired official of the Boston Edison Company and had been for many years head of the statistical bureau of that company. At the time of his retirement he was assistant to the president. Bond was assistant director of the Industrial Bureau of the Baltimore Association of Commerce, having been in the engineering department of the Baltimore and Ohio Railroad and industrial commissioner for the city of Norfolk, Va., prior to joining the Association of Commerce. The sympathy of the Class is extended to the families of these classmates.

We have the following changes of address to report: Harry H. Bentley, 451 West Seventh Street, Claremont, Calif.; Maurice L. Bullard, Mountain Avenue, Pompton Plains, N.J.; Leonard S. Gerould, 1149 South Avenue, Pittsburgh 21, Pa.; John E. Johnson, Production and Marketing Administration, 2411 Fidelity Building, 211 Walnut Street, Kansas City 6, Mo. — H. LESTON CARTER, *Secretary*, 60 Batterymarch Street, Boston, Mass.

• 1909 •

Before telling the story of the 40th reunion, another important bit of news should come first. As will be told later, our President, Carl Gram, is in England and is likely to be there for a long time. Although the plans for the reunion and the class fund were made successfully without a top executive, this was due to the ability and the high degree of mutual co-operation among the committee members in charge. With the fund and other activities that are certain to occur, it was realized that there should be someone right at hand who could give official approval when class action is necessary. Hence, at the dinner meeting at East Bay Lodge, the Class unanimously elected Jim Critchett, our senior-year president, acting president in Carl's absence. No need to say that we're lucky to have a man like Jim to take charge. Living up to the duties which go with his position, he opens the year's notes with this message: "Now that the 40th reunion of the Class is a matter of record, I am sure that the 80-odd members of the Class and their wives, who celebrated it together at East Bay Lodge, are looking forward to the next gathering of the Class as much as Mrs. Critchett and I are. The Lodge certainly took excellent care of our physical needs and the surroundings were very pleasant. It was great fun to renew old acquaintances and catch up on the news of old friends. Munoz and Joslin, both from Mexico, neither of whom

I have happened to see since graduation, deserve the prize for having traveled the greatest distance to reach the reunion, but Paul Lord from El Paso and Haylett O'Neill from Houston, Texas, were not far behind and many others came nearly as great distances. Incidentally, I thought Ramon Munoz's remarks at the dinner the last night we were there very witty and appropriate to the occasion. Molly Scharff gave an interesting account of the class fund and Chet Dawes's extracts from the letters of those who were with us in spirit, if not in person, rounded out in some detail the news we had gathered from our discussions with those present.

"It is always a joy to listen to Horace Ford and this occasion was no exception. His picture of the financial side of the Institute opened many of our eyes to the magnitude of its operations and gave added importance to the current drive toward funding M.I.T.'s independence. Tom Desmond's generous gift to the fund certainly set a standard that each of us should try to meet. Len Loomis, who is at least partly '09 in his affiliation since he took his degree in our year, is a member of the local fund committee with the writer. But getting back to the reunion, I heard many expressions that we should hold the next on our 45th anniversary rather than wait for the 50th. At this stage of our history that seems a wise idea. There were many expressions of regret that his health kept Paul Wiswall from being with us. We all missed that indefatigable class worker and general good fellow. His doctor came by the Cape and gave me an assurance that Paul is on the mend. Congratulations to Chet and Art Shaw and Henry Spencer for their good work that made our 40th such a successful reunion."

After the foregoing introduction by Acting President Jim Critchett, the Secretaries will endeavor to present some sort of picture of the 40th reunion held at East Bay Lodge, Osterville, on June 17, 18 and 19. There is so much to be said and so many messages from classmates that only a small part can be included at this time, as otherwise no room would be left in *The Review* for any other Institute activities. The consensus was that it was the best reunion ever. The most important result of the reunion, we believe, is that everyone came away with a feeling that '09 is tops in its accomplishments, class spirit, friendliness and in the desire of everyone to show his gratitude to the Class and the Institute. Including members of families, there were 79 present, a large number for a 40th. This compares favorably with 98 at our 25th, 61 at our 30th, and 21 at our 35th, although this last was an impromptu war meeting. The reunion committee, spearheaded by Art Shaw and Henry Spencer, deserve a great deal of credit for having worked so long, so faithfully and so efficiently to make the affair go so smoothly. They not only arranged for the three most beautiful days that summer could supply, but even attended to such a small but important detail as having a feast of broiled live lobster awaiting us on our arrival Friday.

We made every effort to obtain the names of everyone present and if we have

missed any we apologize. Some came for only a part of a day, but we hope that we have included them. Any omissions will be gladly corrected. The following attended with their wives: Denison K. Bullens, Philip H. Chase, Horace L. Clark and daughter, Joan Elizabeth, Howard W. Congdon, James H. Critchett, Chester L. Dawes, Thomas C. Desmond, Bradley Dewey, George I. Emerson, Charles Freed, Bernard R. Fuller, Royce W. Gilbert, George H. Gray, Calvin N. Harrub, Derick S. Hartshorn, John M. Hatton, Delos G. Haynes, Garnett A. Joslin, Frank J. Lange, Paul B. Lord, Benjamin W. Pepper, Chester H. Pope, Julius H. Serra, Arthur L. Shaw, Laurence C. Shaw, Henry K. Spencer, Raymond B. Temple, Albert E. Thornley, George E. Wallis, and Melville K. Weill. Also present were: Elliot Q. Adams, Henry C. Colson, Jr., Ridsdale Ellis, George A. Haynes, Ed Howe, Robert M. Keeney, Walter W. King, Francis M. Loud, Thurston C. Merriman, Ramon F. Munoz, Haylett O'Neill, Harvey S. Pardee, Joseph W. Parker, Maurice R. Scharff, Dwight W. Sleeper, Harold O. Stewart, Harry E. Whitaker, and John A. Willard.

As would be expected, and for good reasons, many could not come but sent us greetings and other messages which will be considered later. No absentee was more disappointed than Paul. As may be readily inferred from class notes, he had planned for a long time to attend this particular event as a high spot in his career. However, an indisposition made it unwise for him to attempt to travel and he says: "To miss the reunion was just about the bitterest blow I ever had to endure." Most appropriately, a telegram was sent during the dinner apprising Paul of our regrets as to his absence and our affection for him. He replied: "Your fine telegram just received. Bless you all for thinking of me. I have loads to thank the good Lord for and one thing, indeed, is the Class and their kindly thoughts of me. I am on the up and up and rejoice to tell you so." Later, a letter signed by more than 50 classmates was sent to Paul to which he replied: "That letter is something I shall cherish always." The Farrar family with whom he has lived so happily for the past 25 years has moved to Baltimore but, fortunately, the daughter has taken him in and he is mighty happy over the new arrangement. His new address is 527 Belleville Avenue, Glen Ridge, N.J.

We have already mentioned that Carl is now in England and is in charge of a sizable engineering assignment. We received a letter from him wishing us "a most successful and enjoyable reunion. Naturally I am most disappointed that I could not be there." His letter, explaining the present situation and the developments that have taken place, was read at the dinner on Saturday evening. In order to be certain of a good secretary, he has taken along his oldest daughter, Alberta. His wife and daughter Gloria are disposing of the Pennsylvania farm properties and will join him later. He has run right into British austerity. He says: "Would we like to have some of that cream and butter, hams, chicken, eggs and fruits that we raised on the farm. I had

five eggs during the entire first eight weeks and there were no fruit juices." The assignment is expected to last some five years. He concludes: "If anyone is coming to this part of the world during the next three years, be sure to look me up and, preferably, give me some advance notice so I will be available. My office address is in care of Foster Wheeler, Ltd., Aldwych House, Aldwych, London, W.C.2. Telephone: Holborn 1138. My home address at present is Dolphin Square, London, S.W.1. Home telephone: Victoria 3800, extension Rodney 302. If anyone has occasion to reach me by cable, my cable address is simply Carlgram, London, which is always forwarded wherever I am."

No attempt at formal entertainment at the reunion was made. As it turned out there was scarcely time to visit with everyone. Friday evening Chet Pope showed some excellent colored movies of a trip which he had made to South America. There were many beautiful scenes of mountains, lakes and rivers, in places not visited by the usual tourist. There was more piazza sitting than anything else. The only golf enthusiasts were George Wallis, Thurston Merriman and Chet Dawes, who twice went around the 18-hole Wianno course. There were no prizes; but had there been, George would have won in a walk. Many took advantage of the nearby sandy beach and warm water to bask on the sand and swim in the ocean.

The only official event was the class dinner held Saturday evening with Jim Critchett as toastmaster. Molly was able to report that his efforts to increase the class contributions to the class fund had met with great success. With funds already on hand with Mr. Ford, value of insurance policies, other contributions and provisions in wills, the total amount is \$80,468.79 with \$1,000 more pledged. In addition there are some special gifts. After generous contributions to the class fund, Tom Desmond is giving a total of \$25,000 which includes \$2,075 for one-third the cost of the new Photogrammetry Laboratory and \$2,925 as an additional contribution to the class fund. George and Mrs. Witmer have made provisions in their will whereby the Institute will receive \$76,000. Thus, the Class has not done so badly for the Institute after all. The original fund contributed by the Class was restricted to scholarships for deserving students, "preference being given to direct descendants of the Class of 1909." In order that this fund, which includes many current gifts from members of the Class, might be credited to the Institute Development Fund now being raised, this restriction was removed on March 1, 1949, by a majority vote of the surviving members who had contributed to the fund. Prior to this date, Horace Clark had made inquiry as to whether scholarship assistance was available to his daughter, Joan Elizabeth, who, at that time, had not completed the admission requirements. She has now completed these requirements and at the Saturday evening meeting, at which 52 per cent of the surviving members of the contribution to the fund were present, a resolution was unanimously passed removing the restric-

tions in this particular case in view of the special circumstances, and granting a \$500 scholarship. Knowing Horace and his family, we can certify that the Class is highly pleased that a daughter of one of its good members is to receive the benefit of our '09 fund.

Chet Dawes read letters and telegrams of regret from those unable to attend. These included Tom Atherton from Wilkes-Barre, Pa.; Captain Lee S. Border, U.S.N., retired, Coronado, Calif.; Ballard Burgher from Dallas, Texas; General Cliff Carter, retired, Washington, D.C.; Cummings Dort, Bala-Cynwyd, Pa.; Harold Eaton; George Gadsby, Salt Lake City, Utah; Leon Healy, Milwaukee, Wis.; B. Edwin Hutchinson, Detroit, Mich.; Charlie Johnson, Putnam Valley, N.Y.; Lester King, South Norwalk, Conn.; Clarence Maynard, Belmont, Mass.; Art Morrill, Shanghai, China; Johnny Nickerson, Hartford, Conn.; Sam Perkins, Dorchester, Mass.; Charlie Radford, Oshkosh, Wis.; Harold Sharp, North Hollywood, Calif.; Phifer Smith, Valley Head, Ala.; Francis Soderstrom, Phoenix, Ariz.; Lockwood Towne, New York City; and George Varney, Mt. Vernon, Maine. This interesting note, mailed via Hongkong on June 4, was received from Art Morrill: "Two days after I wrote that attached letter, the Communists had most of Shanghai and we were 'liberated.' So far, they have been most moderate, reasonable and honest. There was a good deal of shooting but most of it a long way from here." Interesting class news came with many of these letters which space does not permit quoting at this time. Much will appear in future editions. Ramon Munoz, in his humorous and inimitable style, told how he organized and became president of a one-man (initially) Technology club in Mexico. Another event of the evening was the projection of photographs of many early reunions, beginning with 1916. Some of us looked "different" but everyone was recognizable. Several photographs were taken of our group at this reunion as records for posterity. Some already have requested an opportunity to obtain prints if possible. If those who took the photographs can supply any prints, please advise us.

Just as at the 25th reunion, Horace Ford was the guest speaker. He told of the many recent developments at the Institute; how much of the land between the two bridges, West Boston and Boston University, had been acquired and how the budget had risen from \$600,000 in 1909 to \$8,000,000 academic and \$16,000,000 sponsored research (95 per cent government) in 1949. When he first came to the Institute the average working bank balance was \$50,000; now it is nearer \$1,500,000. Investments in 1930 were \$30,000,000 and are now \$50,000,000. He told about the new Hayden Library and the new dormitory and what a worker Jim Killian '26 is. Two reels of colored movies were then shown, including the construction of the library and the new dormitory, and the recent convocation showing, particularly, the inauguration of Jim Killian.

The response to the request for contributions to the class treasury has been

most generous and your class officers appreciate highly this further demonstration of class spirit. The reunion expenses have been easily covered, although there remains the expense involved by the class fund committee, headed by Molly, in its campaign for contributions to the Institute development fund. A more detailed financial report will be made in a subsequent number. — PAUL M. WISWALL, Secretary, 527 Belleville Avenue, Glen Ridge, N.J. CHESTER L. DAWES, Review Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass. Assistant Secretaries: MAURICE R. SCHARFF, 285 Madison Avenue, New York, N.Y.; GEORGE E. WALLIS, 1606 Hinman Avenue, Evanston, Ill.

• 1910 •

I have received the sad news that Ralph Smead passed away on July 6. The following is from the *Recorder-Gazette*, Greenfield, Mass.: "Word has been received here of the death . . . of Ralph A. Smead, formerly of Greenfield, at his home in Los Angeles, Calif. A native of this town, he was the son of Mr. and Mrs. Albert J. Smead and was graduated from Greenfield high school in 1902. He was also graduated from Dartmouth college and M.I.T., later working as a consulting engineer in Hartford, Conn., Detroit, Mich., and Los Angeles where he was employed by the municipal government. He leaves his widow, the former Cora Faler and a sister, Mrs. Mabel S. Wing of Orange."

Frank Bell has been elected as a director of the Society of American Military Engineers and attended the annual meeting in Washington, D.C., in May. — I have received the following from Cliff Hield who is heading the committee for our 40th reunion next June: "Since Frank Bell asked me to head the committee on arrangements for the 40th reunion, I have been in touch with a few of the committee members who have accepted the job of making the reunion the best yet. We have plans that we hope will bring our 40th the largest proportion of the living members that we have yet had. Harold Billings and Hal Manson will arrange for the day in the country and I am sure that they will find the ideal place. There will be, of course, the class dinner, where we can have another good visit, the All Technology luncheon in the Court and the banquet of all the classes. An opportunity (at leisure) to inspect the new buildings and new department operations is there for the asking."

"It is always well for class members coming to a reunion to arrange in advance to meet one or more of their classmates in Boston, or, better yet, to travel with them. That makes for a most interesting reunion for all concerned. With that in mind, the reunion committee plans to mail to each member of the Class a printed list with addresses of the entire Class."

If we all plan now to come to Boston and Cambridge in June, 1950, everyone can have a most interesting and delightful visit with one another, and can do exactly as he wishes without regimentation of any sort. We are all indebted to

the greatest educational institution in the world today; we are proud of it and the satisfaction it has been to be connected with M.I.T. in any manner. The committee hopes that the 1950 reunion will result in renewing many pleasant memories. It will, if we have a large attendance." — I am sure that with Cliff's dynamic personality and his ability to get things done, this 40th reunion will be a great event. Remember how Cliff broke up Professor Talbot's lecture in October, 1906, at the time of the annual Field Day? Let us decide now to be in Cambridge next June to talk over some of these past events.

Just before the Mid-Century Convocation in April I had a letter from Allen Gould who expected to attend until he found that he had to undergo an abdominal operation and expected to be in the hospital for a few weeks. Guy Harcourt stopped in to see me just as I was finishing these notes. Guy is vice-president, engineering, of the Bufllovak Equipment division of the Blaw-Knox Company. He is living in Buffalo and had just finished a vacation at Little John Island, Casco Bay, Maine.

There were six 1910 men at the annual Alumni Dinner at the Statler Hotel in June: Jack Babcock, Arthur Curtis, Henry Hale, Hal Manson, Cliff Waldo and your Secretary. — Here is a reminder to those who have deferred sending their class dues. Look up my request and self-addressed envelope and enclose a check. There are expenses to running a reunion. — HERBERT S. CLEVERDON, Secretary, 120 Tremont Street, Boston, Mass.

• 1911 •

Now it can be told! With an August decision by the executive committee of the Alumni Association, of which your Secretary is now first vice-president, designating Monday, June 12, 1950, and Monday, June 11 (there's that '11 again!), 1951, as Alumni Day in a return to the popular Monday, we were able at once to set the dates for our 40th reunion — Friday, Saturday and Sunday, June 8, 9, 10, 1951, and make a reservation for use, for the third successive reunion, of East Bay Lodge at Osterville. In giving us the requested reservation, proprietor G. M. Leghorn wrote: "In all honesty, I can say that there is no class we would rather entertain and I feel quite proud that you are planning to be back with us in 1951."

With deep regret we must report the death of two classmates since Alumni Day, 1949: Ernest M. Symmes, V, on June 15 and Donald C. Bakewell, II, on September 10.

Ernest Symmes was born on April 1, 1889, in Winchester, Mass., and prepared at Winchester High School. While at Technology he was a member of the Chemical Society, the Wireless Society and the Rifle Club. Immediately upon graduation in 1911 he joined the Hercules Powder Company, Wilmington, Del., and had been with that company continuously until his death at his home in that city of a heart attack.

Lloyd Cooley, X, wrote from Chicago that he saw Ernest occasionally over the years at conventions and enclosed an

obituary from *Chemical Engineering News* of July 4, which said, in part: "Symmes directed all the work of establishing and maintaining trademarks, both domestic and foreign, at Hercules. For the past 20 years he had served as an assistant editor of *Chemical Abstracts*, in charge of the section on acids, alkalies, salts, and other heavy metals. He joined American Chemical Society in 1924." He leaves his wife, Arlene, a son and a daughter.

Don Bakewell, an outstanding figure in the steel industry, was born on December 5, 1887, at Salem, Ohio, and prepared at Hotchkiss School, after which he got an A.B. degree at Yale before entering M.I.T. in our sophomore year. He at once became active in undergraduate activities, being a member of our sophomore football team, goal on the varsity hockey team in his sophomore and senior years and a principal in the Tech Show of 1911. Right after graduation with us Don entered the steel business with the Pennsylvania Company of Altoona, Pa., subsequently became president of the Duquesne Steel Foundry Company of Pittsburgh and the Pittsburgh Forge and Iron Company. He also was a member of the executive committee and vice-president of the Blaw-Knox Company, vice-president and director of the E. H. Jennings Brothers Company, a director of the Coreapolis Trust Company and president of the National Founders Association. A member of the Scroll and Key society of Yale and Alpha Delta Phi fraternity, Don also belonged to the Pittsburgh, Duquesne, Rolling Rock and Allegheny Country Clubs, the Yale Club of New York and the University Clubs of New York and Chicago. He and his wife, the former Margaret Jenifer Jennings, who survives him, had made their home for years at Sewickley, Pa., a suburb of Pittsburgh, but Don's death, also due to a heart attack, came at the Bakewell's summer place at Hyannisport on Cape Cod. A son, Richard, and two daughters, Mrs. Roy L. Rather and Mrs. Lester M. Strong, also survive Don.

On July 2 in Grace Episcopal Church, Kingston, Pa., Donald Read Stevens, Jr., son of Don and Lois Stevens of Ridgewood, N.J., was married to Jean Alice Lambert, daughter of Mr. and Mrs. Kenneth Alfred Lambert of Kingston, while two weeks later Barbara E. Hartshorn, daughter of Stan and Julia Hartshorn, was married here in Gardner to Attorney Francis E. Silva of Roslindale, a major in the Army Reserve, who graduated from Harvard College and Harvard Law School and is a practicing attorney in Boston. Barbara, a former wave lieutenant, is a graduate of Radcliffe College and is registrar of the Garland School in Boston.

Stanford H. Hartshorn, Jr., Stan and Julia's son, was awarded the degree of B.S. in forestry and conservation at the University of Michigan in June. A Navy veteran, young Stan had first entered M.I.T., where he became a member of Sigma Alpha Epsilon Fraternity, later transferring to Michigan in the training program for technical and administrative executives in the furniture industry. He

has now returned to Michigan for his master's degree, after which he will be associated with his father in C. H. Harts-horn, Inc., Gardner, furniture and baby-carriage manufacturers, "cradle to grave," as big Stan says.

Russ and Nan (Nancy Van Tassel) Harmon, who were with Ted and Helen at our 35th reunion, now have a fine six-pound son, Bruce Edward, born in Belleville, Ill., on June 6. In mid-August the Harmons moved to Randolph Field, Texas, where Russ has been assigned as an Army Air instructor.

It certainly was great to have Frank Osborn, III, back from South America and present at Alumni Day last June. There were 14 of us at the luncheon over in Du Pont Court and 12 at the annual banquet at the Hotel Statler. After luncheon, Frank thought he'd like to see a big league game, so Obie Clark, II; George Cummings, VI; Dennie, VI; and Frank went over to Braves Field and saw the Chicago Cubs beat the Boston Braves five to two. After the game we joined the Alumni and guests in inspecting the new dormitory and then Bill Coburn, XI, invited Frank and Aleck Yereance, I, and me over to the Algonquin Club for libations before the banquet. Frank said he had the time of his life and was returning to Chile with very pleasant memories. Other classmates participating in this year's Alumni Day included John Alter, IV; Monk deFlorez, II; Henry Dolliver, I; Fred Harrington, I; Jack Herlihy, II; Carl Richmond, I; O. W. Stewart, I; and Emmons Whitcomb, X.

Don't forget, this year's "Seven Come Eleven" class dinner at Walker Memorial, M.I.T., will be held on Monday evening, November seventh—so plan to be in Cambridge at that time.

At the French Embassy in Washington on June 14, before a distinguished company, General Lauzin, Air Attaché, conducted on behalf of the ambassador a ceremony of presentation of the French Legion of Honor to our own General George C. Kenney, I (rank of commander), and to Professor J. C. Hunsaker '12 (rank of officer). Our hearty congratulations to you both! Testifying before the House Armed Service Committee in early August, George, who once wanted to scrap the B-36 program and turn the 10,000-mile bomber into a flying filling station, testified that he had been agreeably surprised at its success as a bomber, adding: "It can apparently do anything as a combat craft, is perfectly safe to take anywhere and nobody has a fighter plane that can touch it!"

Harry Tisdale, V, recently sent along a picture of our Navy hero, Rear Admiral Luis deFlorez, II, chairman of the award committee of the Special Devices Association, presenting Austin S. Igleheart, President of General Foods Corporation, a distinguished service award for G. F.'s outstanding accomplishments in rapid learning techniques and mass training. Harry added that he and Grace were planning an early September vacation in the Catskills.

At the annual meeting of the M.I.T. Alumni Council last spring, Dick Gould, XI, was reappointed to the departmental

visiting committee for Civil and Sanitary Engineering, while 1911 has men in prominent positions in the \$20,000,000 M.I.T. Development Program, with Bob Haslam, X, chairman of the committee on business corporations and Monk deFlorez, II, and Bill Orchard, XI, members of the committee on special gifts. Ye Secretary is chairman of the alumni solicitation committee for the Fitchburg-Gardner area.

At the June commencement exercises at Northeastern University, Boston, President Carl S. Ell, XI, had the pleasure of conferring the honorary degree of doctor of laws on M.I.T.'s fine new president, James R. Killian, Jr., '26. In his traditional charge to members of the graduating class Carl declared that a new era faces the college men of today. "We have frontiers sparkling with opportunity far beyond the most fanciful dreams of our ancestors," he said. "The atomic age and the present worldwide human relationships open to you unlimited opportunities. All that has gone before is prologue to broader education, deeper experience, greater achievements that are to be. . . . The human mind is virgin empire until it is developed, informed and trained. It remains for each of you to make the choice as to how you will use the diploma you hold in your hand at this moment—a document of little value in itself, but of particular significance in that it indicates that you have a treasure of great value, a disciplined mind, well equipped to do good—a precious possession. You can give it increasing value and meaning by earnestly endeavouring to understand the world and the people around you; by devoting your time and your energy to improving yourself, your home, and your community; by making your part of the world a better and happier place for everyone."

Louis Golden, VI, long a leader in civic work in Metropolitan Boston, has been elected a vice-president of the Associated Jewish Philanthropies of Boston. Congratulations, Lou!

Ban Hill, I, who retired in 1945 after a nine-year presidency of the Baltimore Transit Company, just refuses to be inactive. Because of his inventive mind and mechanical ability, little patients of the Children's Hospital school in Baltimore—many of them victims of polio—have been enabled to handle tools dear to the heart of boyhood everywhere. "Gadget Man," is the title the *Baltimore Evening Sun* gives Ban and in a story about Betty Adler, prominent Maryland lecturer, says: "Cutting a piece of meat for herself, buttering a piece of bread, holding a heavy book open, even in a breeze, these were the things Miss Adler wanted most to do. The result for her was the gadget made for her by Bancroft Hill, who is working out ways to help the 'polios' of the Children's Hospital School do things for themselves. This takes the place of an extra arm (Miss Adler has the use of only one) and screws on to the lap-board on her wheel-chair. By means of it and its various attachments she can now cut food, open recalcitrant bottles of ink, sharpen pencils and even fill a fountain pen—all with one hand. But to Miss

Adler the most important thing is the attachment which enables her to hold a heavy reference book open on the board while she uses her good hand to take notes."

Sara and I have been through quite a strain this summer, for in mid-August our daughter, Helen Elizabeth, wife of Peter Barton and mother of three fine children, was stricken with polio; but fortunately it proved to be nonparalytic and after four weeks in a Worcester hospital she is now recovering slowly but steadily at her home in Boylston, Mass.

Raymond Cole, II, who makes and sells wooden toys and gifts at his workshop in Newcastle, Maine, was pictured in the August 9 Portland, Maine, *Press Herald* with an exhibit at the third annual Maine Coast Craftsman's Fair and Sale at Rockport, Maine, beside a number of his carved boats, lobster buoys and other wooden novelties in nearness to the sea and Maine motif. — Sam Schmidt, VII, editor of the Jewish paper, *Every Friday*, in Cincinnati, writes that he has "been sort of commuting during the past four years between Germany, France, Czechoslovakia and Poland in the interests of displaced persons" and returned last April to Cincinnati to stay a while. He enclosed a clipping from the Cincinnati *Post* telling of an interesting "conversion" he had made of a despondent G.I. in Germany. Sam presented the G.I. a Bible and told him there is a great deal of power for a man in the Book of Psalms. He reported the case, through Consul Cecil Gray in Paris, to the man's regiment and months later in Cincinnati Sam heard from the chaplain that he had "found some salutary effects upon his character, with a new and better outlook plainly visible." Fine work, Sam!

Don Frazier, II, presided at the Flag Day observance at Richmond, Va., in mid-June, in exercises by patriotic, civic and military organizations there commemorating the 172d anniversary of the birth of the Stars and Stripes. Jess wrote that she was certainly proud of him and the way in which he conducted the ceremonies, which included a procession and massing colors never to be forgotten. Don is president of the Richmond Chapter, S.A.R., and also superintendent of the Sunday school and treasurer of the building fund of the First Presbyterian Church in Richmond. "We can hardly wait for the next reunion and certainly hope to be there in 1951," Jess concludes.

Had a fine, breezy letter from Dick Ranger, VIII, written in late June while on the Golden State Limited, en route back home to Newark, N.J., after being "out with the Hollywood high-binders trying to convince them of a new way of registering sound on movies." The day before, he said, he had dropped off at Nowata, Okla., to see Bill Warner, I, who is now starting "his third venture, air conditioning, based on low wet-bulb temperatures in the dry Oklahoma climate" helping his son, Jack, to establish the business, "a neat trick of averaging incoming and outgoing heat contents with some revolving aluminum foil, sired by Bunny Wilson, XIV. Bill first was an oil man, building on his father's begin-

nings a nice business from prospecting to delivery to some of Bob Haslam's minions," Bill continues. "Then, on the side, he has recently had a little ranch of 800 acres on which he raised cattle. All of this he has disposed up of \$10 cost to \$30 sale per acre." Bill proceeded to take Dick and Bill's son, Jack, and his business associate on a grand trip seemingly all over Oklahoma in Bill's de luxe Ford, ending up "down Mexico way" for a fine Mexican dinner and finally back to Tucson, where Dick took the rattler.

C. H. S. Merrill, I, followed up an earlier letter to the Boston *Herald* titled, "Britain Does Things Better," with an early August effusion titled, "Britain Borrows Better."

Major General Syd Spalding, III, who went to West Point soon after starting out with us, and who most recently has been acting director for industrial programs in the Munitions Board, retired from active military service August 31 to Patowmack Farm, Route Two, Herndon, Va., where he operates a large dairy farm. For his World War services he received the Meritorious Citation Certificate and the French Order of the Black Star, receiving also the Legion of Merit in 1944, the Distinguished Service Medal in September, 1945, and he also received the Purple Heart.

Monroe Pevear, IV, President of Pevear Color Specialty Company, Boston, spends a great deal of time at his summer place in Hubbardston, near Gardner. I was sorry to have been in Boston one day when he called recently, but he left word that he was feeling fine. I also heard from Frank Wood, II, learning for the first time therefrom that he had retired and is living at 10 Clark Avenue, Beverly, Mass. "Am thankful," he wrote, "that I have a home, a good wife, a married daughter with two darling youngsters (boy and girl) and a son, who seems destined to be a bachelor, though he still has a year to go to reach the age when I married."

These late summer notes are being written upon my return from this year's annual Freshman Week End at M.I.T. and Camp Wonderland in Sharon, where, as I have at 28 of the 29 camps held since 1926, I have been teaching the frosh Technology songs and cheers, umpiring ball games, and so on; a week end I look forward to each year.

Now for a few address changes to close: G. Arthur Brown, X, 161 Emerson Place, Brooklyn 5, N.Y.; James O. Greenan, III, Greenan and Company, Inc., First National Bank Building, Reno, Nev.; Raymond H. Lord, VI, Post Office Box 1148, Providence, R.I.; Samuel M. Schmidt, VII, 725 Greenwood Avenue, Cincinnati 29, Ohio; Roy D. Van Alstine, I, 680 West 11th Street, Claremont, Calif.; Frederick L. Woodlock, II, 75 Prospect Street, Wellesley Hills 82, Mass.; Clarence A. Woodruff, X, 220 Pioneer Avenue, Trucksville, Pa.

Our fund receipts continue to mount and thanks to the fine support you all give it, we need never be ashamed to point out where 1911 is in the standing. Mark down those reunion dates; June 8, 9, and 10, 1951, at East Bay Lodge, Oster-

ville, and then, Monday, June 11, 1951, "back to Tech" for Alumni Day. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

The first off-year reunion in the history of the Class was a great success. A total of 41 persons participated in some or all of the events and derived great satisfaction and enjoyment from the affair. Classmates began arriving at the New Ocean House in Swampscott on Friday afternoon, June 10. Albion R. Davis, of the Davis and Davis committee on arrangements appointed by Fritz Shepard, was on hand to extend a welcome to each newcomer. Groups formed in the lobby and on the porches to exchange greetings and renew old friendships. These informal meetings continued throughout the reunion and were one of its most enjoyable features. The lobster dinner Friday evening was attended by Harvey S. Benson, II, Charles E. Dodge, I, Jerome C. Hunsaker, XIII-A, Milton Kahn, X, Hamilton Merrill, X, Cyrus F. Springall, IV, Bates Torrey, Jr., X, Lester M. White, X, and their wives and Albion R. Davis, II. After dinner the friendly discussions continued unabated until quite late. Saturday morning the group was joined at breakfast by Harold and Mrs. Manning, X, and Fred W. Barker, X. Saturday was devoted to participation in the Alumni Day activities at the Institute. Some of the men took the tours provided or visited persons they specially wished to see while others played golf. Charles C. Jones, I, John H. Lenaerts, VI, John and Mrs. Pettingell, I, and Fred J. Shepard, Jr., VI, were added to the roster at the luncheon in the Du Pont Court. The tea for Dr. and Mrs. Killian and the formal opening of the new dormitory in the afternoon was well attended by members of the Class. Before the banquet, a group gathered in an appropriate location in the Hotel Statler for predinner convivialities with the usual good fellowship. At the banquet the Class was seated pretty well toward the speakers table, which may be construed as a sign of something or other. Those who showed up for the first time at this dinner were James A. Cook, VI, Carlos P. Echeverria, II, Gerald M. Keith, I, Erwin H. Schell, II, and John D. Shore, IV. The story of the banquet, with its stirring announcements is told elsewhere, but the '12 men were still as full of class spirit as ever and all had a splendid time. Some of the ladies attended a separate dinner at the Statler and heard the speeches from the balcony, while others went to the "Pops."

After breakfast Sunday morning, the order of business was golf, swimming, walking, and visiting. By noon, however, everyone had assembled at one spot on the veranda for a last meeting before the final dinner. As there were several other reunions at the hotel, the porch was very well filled. Suddenly a man appeared on the front steps carrying an old fashioned hand organ and grinding out merry tunes. He proceeded along the porch, with

every head turned toward him, until he reached the 1912 group and there he stopped to render a serenade. It turned out that he was Fritz Shepard and he made a big hit, not only with the Class, but with the entire group as well. When dinner was announced, Fritz led the Class into the dining room playing the organ and getting the dinner off to a hilarious start. In addition to many of those previously mentioned, there were present at this dinner Mrs. Albion Davis, Mrs. Echeverria and son Carlos, Jr., Norwood and Mrs. Hall, VI, Mrs. Lenaerts, Wallace and Mrs. Murray, X, Mrs. Schell and Mrs. Shepard. Nicholas T. McNeil, I, visited at the hotel during the morning. The whole reunion was admirably arranged, the hotel was excellent and, for a change, the weather was perfect. Great credit and thanks are due to all that had a hand in the preparations, but special appreciation is due to Albion R. Davis for his part in the celebration. All those attending look forward to the 40-year reunion in 1952.

One pleasing result of the canvass of the Class in preparation for the reunion was the number of responses from men who have not been heard from for a long time. Many of these messages have been reported already and others will follow. Some of those sending regrets, best wishes, regards to the "gang" and/or hopes for 1952 were Andrew F. Allen, XI, VII, Ralph M. Ferry, II, Charlie Gabriel, X, (by wire), Page Golsan, VI, Tod Greenleaf, I, Harold C. Mabbott, II, Max Mason, VI, Harold D. Mitchell, X, Bernard Morash, VI, F. Lawrence Mowry, XI, Johnny Noyes, II, J. H. Pratt, X, C. Bolmer Vaughan, II, and Louis S. Walsh, X. Eric Kebbon, IV, wrote that he was unable to attend in spite of his wish to do so. J. MacAulay Costner, I, wrote: "I keenly regret to have to tell you that an illness that incapacitated me several years ago makes it impossible for me to travel. I am, nonetheless, very grateful to you for letting me know about the reunion of our Class." Robert J. Wiseman, VI, said: "I will try to get to the reunion. Am just getting over a heart attack and must take things easy. If the doctor will give me permission, I will attend." Rudolph Fox, II, wrote: "Shall keep the dates in mind. Just now the chances of my being east then seem small. Did you know I have a daughter Phyllis at M.I.T. now who is working toward an M.S. degree in Electrical Engineering? My son Denton is also in your part of the country; a sophomore at Yale." — FREDERICK J. SHEPARD, JR., Secretary, 31 Chestnut Street, Boston, Mass. LESTER M. WHITE, Assistant Secretary, 4520 Lewiston Road, Niagara Falls, N.Y.

• 1914 •

Since the writing of the last notes for this column, no alumni event has been of more interest to classmates than our 35th reunion. This proved to be such an enjoyable affair that a full description of it required more space than was available through these columns. A special issue of the *Fourteen Pointer* was, accordingly, published to describe the event. If you

have not received your copy, just drop a note to your Secretary and a copy will be mailed to you.

Next to the reunion, Alumni Day, held on June 11, was the most important event. Because of the reunion no attempt was made by the Class to make a special affair of this day, but in spite of this there was a good turnout of 14 men and our informal preprandial gathering at the Statler proved a quite festive occasion. Vernon Tallman insisted on being host. Your Secretary noted the following as being present at one or more of the events of the day; in fact, those attending appeared to be taking in all events: Crocker, Derry, Des Granges, Hamilton, William Jackson, Morrill, Morrison, Tallman, How Taylor, Lou Wilson, and your Secretary.

Charlie Fiske, who did such a fine job in running our reunion, has kept tuned right up to form. His daughter, Ann Adams, was married on August 27 to John Means Thompson, 3d, of Princeton, N.J. Charles, still in the reunion mood, prepared a miniature *Fourteen Pointer* telling all how to reach the family summer home at Cold Spring Farm near Bath, Maine, and the chapel of Bowdoin College where the ceremony was held. Boat trips, swimming, tennis, sailing, and all regular class events were included in the program. Do you wonder that our class motto has become "Let Charlie do it."

The *Fourteen Pointer* has told of the sudden deaths of two very loyal classmates, Malcolm MacKenzie and Admiral Tom Richey. Unfortunately, there are other recent deaths to record. Warren Neal Watson of Auburn, Maine, an executive of the Manufacturing Chemists Association, died in Washington, D.C., on December 9, 1948. Word has also been received of the death on January 15, 1944, of Frederic J. Van Etten. Van Etten had been engaged ever since graduation in the construction business and was the head of the company in Boston bearing his name. He leaves a widow, the former Norma Frances Allen, whom he married in November, 1922. — Two sudden deaths just preceding the reunion were those of Edmund John Reardon on April 20 and Butler Parnell Crittenden on June 16, the very day before our reunion started. Reardon, who lived in Belmont, Mass., was stricken with a heart attack while driving home from work. He was the chief real estate appraiser of the Union Savings Bank of Boston. Ever since leaving Technology, Reardon was associated with the construction industry, having been with both the Fred T. Ley Company and the George A. Fuller Company. He is survived by his wife, the former Julia Costello, and two sons and two daughters. — Crittenden also succumbed to a heart ailment. His death occurred at his home in Southbury, Conn. He had been associated with the oil industry, at one time as vice-president of the Hurricane Oil Company and also as chief chemist for the United States Rubber Company. He is survived by his wife, the former Francelia Miles Baruard, to whom he was married in August, 1915, and by three sons, a fourth having predeceased him. — Those who knew Porter Adams well will recall his interest in

Thetford Academy of Thetford, Vt. On his death his beautiful estate at Thetford was given by his wife to the Academy, of which he was a trustee. The Academy has built a new classroom building on the property and it was your Secretary's privilege to visit this new building at the time of their first commencement held there this June. Many happy days spent on that location with Porter were recalled.

Ted Gazarian was unable to attend the reunion because his daughter, Barbara, was married on that very day, June 18, to Raymond Berman Forst of Omaha. The young people will make their home at Colorado Springs.

Levi Bird Duff, county works director for Allegheny County, Pa., has his hat in the ring for the recently vacated position of commissioner of public works. Duff has obtained considerable publicity in connection with his recent construction of several notable bridges in that area. — We certainly did miss George Whitwell at the reunion. George, always a regular attendant, was prevented from coming by a directors' meeting of the Chamber of Commerce of the United States. George is truly a public spirited citizen. His services are many. A vice-president of the Philadelphia Electric Company, he has served as president of the Philadelphia Chamber of Commerce and is currently an honorary director of that organization. He has headed the local community fund, is a trustee of a local children's home, director of the local school for occupational therapy, chairman of the Philadelphia chapter of Junior Achievement, member of the local veteran's advisory committee, member of the executive committee of the Philadelphia Convention and Visitors Bureau, and an officer of numerous Philadelphia business companies. We missed you, George, but your absence is excused.

Herman Affel has received a great deal of publicity in connection with the celebration of the 20th anniversary of the invention of the Bell Telephone Company's coaxial cable. It is this cable that has made possible television relays and the carrying of 600 simultaneous telephone conversations over a single "pipeline." Affel and his coinventor, Lloyd Espenschied, are responsible for one of the very great advances in modern communications. — It will be recalled that in the July notes the announcement of the engagement of Dean A. Fales, Jr., was recorded. The marriage took place the week end following our reunion. Dean, Sr., in spite of the previous reunion week end, was at his best. Reunions are certainly great training grounds.

Randolph Cole did not quite feel that he could get up from Sherman, Texas, for the reunion. During the War he was an electrical foreman at a nearby Air Corps field, having found it necessary to close his own electrical business "for the duration." He has some land in the Texas panhandle which is now producing some natural gas as well as a little oil. His real interest, however, is in his three grandchildren.

O. C. Hall's son, Ellsworth, was awarded the Kappa Sigma Founder's Cup at the Institute this past spring as the

freshman who best exemplified the ideals of the fraternity. — Ralph Salisbury, who is with the Corps of Engineers at Beckley, W.Va., is resident engineer on a six-million-dollar hospital for the Veterans Administration. — In case you did not hear your Secretary announce the event at our reunion, Bert Hadley, chairman of the board of trustees of Middlebury College, was awarded the honorary degree of doctor of engineering at the June commencement of Norwich University. Your Secretary had the pleasure of presenting Bert for his degree.

Earl O. Turner, Dean of Engineering at the University of New Brunswick, attended the convocation at the Institute in April but was unable to get back for our reunion. He had a good excuse, however, as he and Mrs. Turner were guests at that very time at a conference in Banff Springs, Alberta. Turner remains an active golfer and for some years has been a director of the Royal Canadian Golf Association. — General Joe Wood regretted he could not make the reunion. Currently, he is stationed at Fort Monroe, Va., but says that service on five continents has limited considerably his availability for reunions.

It has been a long time since we have heard from Walter Hughes, but now he turns up at Ojai, Calif. He has remarried since last heard from and in addition to one son (who is an M.I.T. 1948 man) by his first marriage, he has two daughters and a son by his second marriage. Walter's well-known red whiskers are now snow-white but Walter remains his same old philosophical, contented self and is the idol of his children, the youngest of whom is six years of age. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. Ross H. DICKSON, *Assistant Secretary*, 126 Morristown Road, Elizabeth 3, N.J.

• 1915 •

Hello, everybody! Here beginneth the first column of our new season. It's up to you to keep it going. Now we can tell you that our unusual bargain deal for the Technology glasses was made possible through the splendid work and co-operation of Otto Hilbert, who has gone all out to put this over for us. Otto deserves thanks and appreciation from us all. The sale was a great success.

The big news is our 35th reunion (oh, my!) in June, 1950. Max Woythaler and Weare Howlett, the committee on locations will report at an early fall class dinner in New York and Boston where and when it will be held. Inasmuch as Alumni Day will be Monday, June 12, at the Copley Plaza Hotel, Boston, this permits our having our reunion over the week end so that we can all return to Boston for Alumni Day on Monday. Start planning for it now. Make this our biggest and best reunion. As we grow older these reunions should mean more to us.

Lucius Bigelow and John Dalton maintain their old friendship with an annual visit. While Lucius was spending a week end with John in Providence, I had a long telephone talk with him. He is well and busy as head of the organic chemistry department at Duke University, and

is proud of the Ph.D.'s he has graduated from his course.

Congratulations to Larry Landers, vice-president in charge of the Boston office of Philipp Brothers Chemicals, Inc., who has recently been elected a director.

You'll all be glad and relieved to know from Mrs. Swift's letter that Speed successfully came through that serious eye operation. I've talked with him since and we can look forward to the pleasure of having him at the next class party. "Herbert is now out of the hospital and in a convalescent home. We feel the operation was successful and he has high hopes of seeing quite well. Of course, it is too early to say definitely. He will write you himself when he is able to do so."

Alumni Day at the Statler Hotel, Boston, on June 11 found these classmates at the Stein-on-the-Table Dinner: Gabe Hilton, Archie Morrison, Larry Landers, Bill Campbell, Frank Scully, Bill Tallman, Fannie Freeman, Norman Doane, Wally Pike and Parry Keller. Tess Hilton enjoyed herself quietly upstairs so we dropped in to share a little "spirit" with her.

In the April, 1949, *Stokes News*, published by F. J. Stokes Machine Company, Philadelphia, is a long write-up of Larry Bailey's history with the company. Joining them in 1916, he has risen steadily to a prominent place in his company and their industry. We wrote here about his being awarded in June, 1947, the Stevens Institute of Technology's medal for achievement in powder metallurgy. But we did not know Larry is an authority on kite flying and holds his audiences spellbound when he describes kite construction and the fine art of making giant kites soar into the sky. Nice going, Larry.

Herb Anderson, Vice-president of H. Brinton Company, Philadelphia, writes: "We certainly enjoyed the moments that we had together at the convocation in Boston. The class luncheon was a grand finale to the happy times we spent with our classmates and their families. I am in the midst of preparation for flying to Europe and before returning in December, I expect to cover the Middle East and India. I appreciate your giving me Ken Boynton's address in Paris and I'll certainly plan to see him when I reach Paris about December 5." A nice trip to you, Herb, and our regards to Ken in Paris. Frank Scully visited Ken there last year.

On a summer trip to Detroit, Frances and I had lunch in Corning, N.Y., with Otto and Helen Hilbert, again to admire his beautiful and unusual collection of odd and rare Steuben glass. Then dinner and an evening in Buffalo with Ben Neal and his daughter, Peggy, and Gabe and Tess Hilton and their daughter, Muriel. It was a big evening; need I say more. In Akron we had dinner and spent the evening with Herman and Marjorie Morse and Parry Keller and his son Parry, Jr., a fine and friendly visit. We missed Loring Hall who was away from Detroit. Returning, we had lunch with Ben and Sophie Lapp in Buffalo. Their son, Marshall, is preparing to enter M.I.T. in 1950. Time marches on! Herman and May Morse have two married daughters, Betty

and Barbara, and two grandchildren.

After writing the following, Parry Keller went ahead with plans to welcome us especially to Akron. We had a grand time there. "It was nice of you to write to me recently, and I am glad to hear that you and Frances are planning to include Akron in your summer tour itinerary this year. We will all be very happy to have you come to Akron again. If you will just let me know when it will be, I will do the best I can to get the gang together. I am glad I made the decision to go east to the M.I.T. Mid-Century Convocation and Inauguration. I am frank to admit that when I left Akron I was not overly enthused, but I had not been in Boston and Cambridge more than a few hours before I was very happy that I had decided to take it in. The whole program far exceeded my expectations and anticipation of what it would be. It was a very worth-while operation, and I would not have missed it for anything. A further word in regard to the convocation week and the Class of 1915; I marveled at the spontaneity with which a goodly number of the Class and their wives, daughters and sons managed to get together. Azel, I hand it to you and congratulate you on an outstanding piece of work as a class secretary. I refer particularly to the quick get-together in the Hotel Statler after the Winston Churchill reception and to the class luncheon at the Hotel Lafayette in Boston on Saturday afternoon after the inauguration. I thoroughly enjoyed both occasions, and it was nice to get together with the boys again and also with some of their families. I can tell you definitely now that I will be in Cambridge for the Alumni Day program. I expect to arrive sometime on Friday, June 10, and will attend President Killian's dinner meeting for Honorary Secretaries and M.I.T. club officers that afternoon and evening. I am planning to be at the Alumni Day luncheon and banquet on Monday, June 12. If you are planning on any kind of a class get-together, anywhere, you can count on me. I am looking ahead with no little pleasure to going to Cleveland, Saturday, June 4, to be present when my son, Parry, Jr., receives his master of science degree in mechanical engineering from the Case Institute of Technology. For the past two years he has been on the faculty at Case as an instructor in engineering mechanics and strength of materials and has contracted to carry on in the same capacity in the coming school year. He was recently made a member of Sigma Xi (Honorary). It is obvious that he has left his Dad far behind. This summer he will teach surveying at the Case engineering camp for a number of weeks. If it were not for this latter commitment, he would leave with me for New England next week. Please tell Frances that I send her my sincerest greetings and fondest regards, and tell her that I have a suspicion that she did no little of the master-minding on the Mack team in getting the class together so successfully during the convocation week."

After Bill and Helen McEwen had been in Boston for their son's wedding, Ben Neal wrote from Lockport, N.Y.: "It was grand to hear from you and I was mighty

glad to know that you had some '15 men together again, including Bill McEwen. I saw Bill very briefly last Saturday at the Buffalo Country Club, but didn't have time to hear anything about the Boston trip. Just as a matter of interest, I am attaching a little correspondence with Ed Walker. His letter sounds as if he might be softening a bit for 1915." Edward C. Walker, 3d, runs Kozak, Inc., Batavia, N.Y., manufacturers of auto polish materials. This is the first news of any kind we had from him in all these years. Thanks to Ben for reviving him. "Thanks for the order and particularly for the letter as I am so glad to hear from you. By all means, stop if you get a chance. During business hours, I am right behind the Ford Agency on South Lyon Street, telephone Number 1. Any other time, I am usually at 7 Tracy Avenue, telephone 1621-J. I got a letter from George Easter just yesterday and he said that he sees you once in a while. Allen Abrams has stopped in once or twice when he was calling at Jello at LeRoy on some new packaging material he got out. Aside from those and that big squarehead in mechanical engineering, who lives in Lake Worth, Fla., and whose name escapes me for the moment, I haven't seen nor heard of an M.I.T. man for years. So, if you can take a minute or two, or an hour or two, or a day or two, please stop in and I'll do the same next time I am in your vicinity. I go over to Newfane occasionally and one of those trips is due some day in the not-too-distant future."

Sam Eisenberg's son Herbert, Course XV, Class of 1951, is a member of the committee for foreign students project. This was conceived and is run entirely by students, who raised all the funds and made all arrangements to receive, entertain and direct 78 students from 22 foreign countries during their summer term at M.I.T. For the committee, Herbie wants to thank all M.I.T. men who so kindly helped and contributed to make this year's project so successful and he hopes that they will be willing to do it again next year. Noble work for these undergraduates.

With his order for M.I.T. glasses, Jim Tobey says: "This looks like a good deal. Congratulations on your acumen. My daughter and son-in-law are with us this summer. He graduated from the University of Florida and goes to Harvard forestry school for postgraduate studies next year."

Abe Hamburg's son, David, a G.I. student at the University of Chicago, has been accepted for one-year's study in art and languages at the University of Grenoble, Paris, France. He sailed on July 22. Abe and Haya plan to go over next April to return with him. A splendid experience for David.

In Summit, N.J., Frances and I stopped to see Doug and Elizabeth Baker. We missed Doug, who was away preparing for a European trip on some important technical work in connection with his research project for International Telecommunications Labs, Inc., New York City.

Ben Lassen, Raven Electric Company, Inc., 889 Broadway, New York 3, N.Y., owes us a letter from his planned trip to see some of our classmates: "While look-

ing over the class notes in The Review for May, and particularly the vivid description of the get-together of the class 1915 with all its trimmings, I instantly felt that here again I missed something of the kind that will never return. It is too bad that I could not come out but my firm was in the heat of moving at that time to the above indicated new headquarters. For the last two years my mind was occupied with the problem of moving as I lost the building on 23d Street where my firm was located. Now I am set again and am sure that I will try to catch up with the class activities as opportunities will be open. As you know, the longer we live the more interesting the reunions are getting to be. Can you give me an up-to-date mailing list of the Class? I expect to do some traveling this summer and a list will be of great value to me."

Mrs. Minnie Kahn announces the marriage of her daughter, Adele Katherine, to Robert Earl Fortney on September 15 at Hollywood, Calif., and writes from 2269 Canyon Drive, Hollywood 28: "The enclosed wedding announcement concerns the daughter of the late Kenneth Despres Kahn. Ray Stringfield and Mrs. Stringfield were at the wedding reception, also George Cunningham²⁷ and Mrs. Cunningham. Adele almost was an M.I.T. student. She was accepted for entrance this fall but in the meantime Cupid interfered. She graduated from Pomona College in June. I have heard Kenneth and Ray Stringfield talk so much about you that I feel I know you. If you and Mrs. Mack come out this way please look us up, we will (including our new member of the family) be most happy to see you." Thank you, Mrs. Kahn, for the nice letter and congratulations from 1915 to the newlyweds.

Henry Daley wrote from Philadelphia: "Our classmate, Charles P. Putnam, died suddenly in Philadelphia of a heart attack on May 22. He had driven to Philadelphia with his wife and two daughters intending to stay at the Bellevue-Stratford Hotel. Less than 200 feet from the hotel, after driving 250 miles, he suddenly collapsed at the wheel of his car on Broad Street. He was rushed to a hospital but was pronounced dead. Death apparently had been instantaneous. Charley had been located at Lock Haven for approximately 25 years as chief engineer of the New York and Pennsylvania Company, paper manufacturers. He was a native of Lowell, Mass. You will remember that I coaxed him to go to New York with me three or four years ago to attend one of our New York class dinners and he got quite a kick out of it; he had never been back to a class gathering since graduation. He was one 'swell' chap and while I had not seen him too often, I always enjoyed his company on our too infrequent meetings. His home address was 219 West Water Street, Lock Haven, Pa."

Another classmate, Paul W. Weymouth, died in Holbrook, Mass., on June 23. Paul was an active member of the First Baptist Church, Brockton, where he taught and was the organizer of several Bible classes and mission groups. Our Class sympathies go out to the families of Charles Putnam and Paul Weymouth.

Do you like this month's notes? Don't let me down for next month. — Give to the Alumni Fund; write to your Class Secretary; and help Azel. — AZEL W. MACK, Secretary, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

This summer brought about a record in the number of letters and volume of material with which we have to start these notes off on their new season. It is certainly heartening to have a nice stack of mail to look over and to tell the others about. Don't forget to keep it up, and all of you that we have to keep hammering at had better start to loosen up. You'll be seeing our new fancy 1916 letterhead stationery on all future letters and, all in all, it should be a wonderful year, so keep us informed. Also, some of you who have dropped us notes, don't feel let out of things if we don't mention you in one column or another. We have a space limit, and with the volume of mail we hope to receive, based on initial receipts, we may have to ration you out from one month to the next. But don't let that stop your writing!

Another record established was the start of a series of monthly get-togethers for all '16 men in the Boston area. Judged by the enthusiasm expressed by those attending, we would recommend other metropolitan areas to try the same. Remember, we meet on the second Tuesday of each month at Thompson's Spa, Washington Street, Boston, directly opposite the Globe Building. We meet upstairs on the Washington Street side, in the rear of the club dining room, have a big table all to ourselves, and always have a good time. There seemed to be some confusion at our first attempt and two or three stray souls never located the main group; becoming lost, it seems, with some 1915 group who has scooped us on these gatherings. However, Harold Russell, Emory Kemp, Joe Minnevitich, Steve Berke, and your Secretary did succeed in meeting and in having a very pleasant chat. We learned that Duke Wellington's recent marriage was to the widow of a 1915 man. Details will be found in the June, 1949, issue of The Review in the 1915 column. Steve Berke saw Dave Patten and his wife at the Ritz Carlton enjoying themselves and in fine health and spirits. We understand Dave is going back to Portugal as an E.R.A. administrator there.

At our second meeting on July 12 we had a wonderful turnout with Jack Hickey, Norman Thompson, Allen Giles, Tom Berrigan, Harold Russell, Emory Kemp, Earl Townsend, Ed Kaula and yours truly, also. If we reported everything said and discussed at that get-together, we'd need most of the column to get it all in. So we'll pass on to August 10, when, in the noonday heat, Izzy Richmond, Emory Kemp, Harold Russell, Tom Berrigan, Hy Ullian, and Jack Hickey found themselves face to face. Hy informed the gathering that he was off to Mexico on the following Monday. We'll be awaiting the detailed account of that trip. Harold is manufacturing large bronze fittings for the new Metropolitan Water Line. Emory expected a visit from Ray Brown of Niagara Falls, but so far has not

given us an account of it. Jack's son Ed planned to enter Technology this fall.

On September 13 Paul Harrower, Nat Warshaw, Al Giles and the old faithfuls Kemp and Russell showed up. Al told of his trip to Utah this summer, during which time he and his family cruised along 500 miles a day for five days, swearing they would never do it again. Also they went bathing in Great Salt Lake, and, like everybody else who does it, would never step foot in it again. It seems Al got his face to far into it and proceeded to come out well calked with salt. His return trip through Canada via Niagara Falls probably provided ample opportunity to wash out the remaining NaCl. Nat had a visit from Warren Strangman recently. Nat's new address is 255 Tremont Street, Newton. He has become an enthusiastic supporter of these luncheons and we hope to see more of him.

Alumni Day, 1949, saw a number of 1916 men present, including Mel Rood, Murray Horwood, Val Gooding, Shatswell Ober, Al Lovenberg and Steve Berke. Shatswell said he had nothing startling to report, except that his daughter is secretary in the Dean's office at, of all places, Harvard. Al is an air-conditioning and refrigeration engineer in Springfield, Mass., has two daughters and one grandson a year and a half old, promised to "get that story you've been after in time for the next Review" and has somehow forgotten that this is the next Review, because we see nothing coming our way. Murray is professor of Sanitary Science at M.I.T., and reported on his two daughters and one son who attended Bryn Mawr, Radcliffe and Harvard, respectively. His opinion of life is that it is very full and interesting, which is as it should be. Mel vacationed last year near Sydney, Cape Breton, looking up his wife's relatives. He reports it as beautiful country and good fishing, but with no time for taking advantage of the latter. At the last annual get-together of the staff of Arthur D. Little, Inc., last February, Mel received a wrist watch in commemoration of 25 years of service and a citation of accomplishments in that period, for which we offer our belated congratulations. He has two sons and a daughter.

Now to catch up on some of the letters and news notes that arrived early in the summer after our last issue went to press. First, we noted in the April 17 issue of *This Week* magazine an article by Walt Binger on New York City's traffic problem under the title, "What We Can Do About It." Walt was commissioner of Borough Works, Manhattan, from 1938 to 1945 and had a hand in setting up the new traffic commission. It was created to fill the void in the charter which would exist when traffic regulation was taken from the police commissioner. Walt's article indicates a number of things which New York can strive toward in this problem, and he discusses each at length with specific suggestions regarding steps to be taken.

A short note from Leonard Best the latter part of May indicates that he and his wife had returned from an extended automobile trip that took them to Los Angeles, up the coast to Eugene, Oregon, and back to New Jersey. One of our rare

letters from the distaff side arrived from Elsa (Habicht) Mueser of Mountain Lake, N.J. Her compliment to your Secretary in his efforts to procure news is much appreciated and cannot be herein bypassed. Her brief note reads: "Your excellent letters would wring a response out of your own granite; so much talent is wasted upon me. I have not accomplished big things in the industrial fields but I have never regretted the wonderful education I received at M.I.T. I have three children; daughter Edith is married to a medical doctor, son Roland is an assistant professor at State College, Pa., and daughter Sylvia is going to Europe. All three children went to Harvard and Radcliffe and enjoyed the Boston atmosphere."

We read from the newspapers that Joe Barker is still handing out money, something we believe that Rockefeller said was harder to do than to make it. The following item appeared in the *New York Sun* on June 16: "Grants for scientific research amounting to \$235,000 were announced today by Dr. Joseph W. Barker, president of the Research Corporation, a non-profit organization which distributes its total net income in grants. Today's grants will aid sixty-four research projects administered by American colleges, universities and scientific institutions. They bring to about \$650,000 the total distributed by Research Corporation this year. The projects include cosmic ray research, construction of a mass spectrometer, studies of the structure of proteins, total synthesis of morphine, photochemical reactions, electrodeposition of metals and various studies of metal alloys."

We sent a rather ancient photograph of Earl Mellen, which we found in some memorabilia recently, down to Earl to see if he could recognize the handsome young swain it pictured. Says Earl: "When your letter with the enclosure was received my secretary wondered who the handsome young man might be. Nobody associated it with me, and I can readily understand why that would be so. Unfortunately, some of us have the faculty of losing a good portion of our hair as the years go by, and automatically that puts us in a position where in comparison with our younger years we are no longer recognizable. Even my two daughters did not recognize me, although they did grudgingly admit that some portions of the physiognomy bore resemblances to several of my sons. I am feeling better, although I have not yet played any golf this year."

Val Gooding finally came through with a letter, and a few pertinent facts about himself. He belittles himself by stating: "I have little to say. I have not been abroad, was not in World War II and have not felt I had anything to say that the rest of the class would care about." Thereupon, Val proceeds to write a most interesting letter. He was with a paper manufacturing company in Bangor, Me., after graduation and when drafted went to American University in Washington where he worked on signals such as colored smokes and flares. Since that time he has been with the Strathmore Paper Company, where he is now technical director and in charge of research, stand-

ards and quality control. He wishes any classmates in the area of Longmeadow, Mass., to get in touch with him.

We addressed a letter to Morris Sanders at Winchester, Mass., and received a nice note from his sister, Mrs. James S. Allen, which states: "To save time, I'm sending you the 'few notes' requested from Morris. He has been living in France since 1932, through the occupation and so on, but last June was appointed by the State Department as health attaché for France, Holland and Belgium with headquarters in Paris. Of course that was the *job perfect* as far as he was concerned. In December, 1948, he was transferred to a similar job in Beirut, Lebanon, and that is his present address. He was fearfully disappointed to leave Paris but I think he is having an interesting time in Beirut; in care of American Legation."

Izzy Richmond wrote to us regretting his inability to attend one of our noon luncheons in Boston, stating he would be out sailing on Penobscot Bay at that particular time. His firm won the Harleston Parker Gold Medal for its work on the southern Brookline community center. The medal was awarded by the Boston Society of Architects. Izzy enclosed a picture of the medal-winning design and it surely is a beauty. Our heartiest congratulations. — Many letters to Ed Long have evoked no answer, but a clipping from the Rochester, N.Y., *Democrat and Chronicle* of May 12 informs us that Ed, a "former Sea Breeze boat builder, is now in charge of ballasting and stabilizing Naval vessels at the Naval Base at Hunter's Point, just outside of San Francisco." How about more, Ed? — We have an interesting letter from Dick Hunneman indicating that he has been pretty occupied with his 35th Harvard reunion and another Harvard degree in the family which now holds a total of six Harvard or M.I.T. degrees. Dick's reunion report which he forwarded to us should not be passed by. He writes: "Having, along with many others, materially assisted in that bloody, but little mentioned, and much dismissed achievement, the Treaty of Versailles, those most responsible for refusal to enforce it should long ago have been taken out and hung. Their criminal connivance stands forever as a mortal insult to every dead hero of two wars, and is the incredible all-time low point in the high places of history. I profoundly and abjectly apologize to the generation of World War II for the reprehensible stupidity and puny calibre of the world's statesmen and citizenry of my generation who foisted on them the most unnecessary war the world has ever known. May I submit for my part, that had it been my jurisdiction, things would have been different from the start. Infamy would not have been allowed to masquerade as virtue."

We sent Howard Smith in Groton, Conn., a letter on August 29, and immediately received, two days later, his welcome reply: "You have kindled a spark," says he. "For the past eight years I have enjoyed my leisure time on my small farm just north of Mystic, Conn. Not that I farm much, but I can dream. It is very relaxing from the somewhat trying work of submarine designing, which has been my

life work. Woodworking and yacht designing serve as interesting hobbies. I hope to retire in a few years and greatly increase the size of a nice raspberry bed I now have." Howard's two sons and daughter have so far presented him with five grandchildren. Son Howard is in Mystic, Conn., daughter Meral in Groton, and son Edward in Phoenix, Ariz.

Request for addresses department: We have had a letter returned and marked, "Gone Away" for Ellery C. Wood, Pequot, Newton Road, Torquay, Devon, England. Anybody know where Ellery has "gone away" to? Not even the Alumni Office has an address for G. H. Thos Washburn. We had Dallas, Texas; they have had mail returned from both Texas and the Isle of Trinidad. Clues welcome.

In closing, we regret to inform the Class of the passing of Charles S. Makepeace, Providence, R.I., on August 29 at Providence's Jane Brown Hospital. Saul, as we knew him, was an active member of the Class, attended the last reunion, and will be sorely missed. Your Secretary has conveyed the sympathies of the Class to his family.

Don't forget our monthly get-togethers in Boston. We hope to have a large attendance during the winter, both from Boston and other areas. If you are in the vicinity, be sure to drop in. And don't forget where to send those letters. — RALPH A. FLETCHER, *Secretary*, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, 463 West Street, New York 14, N.Y.

• 1917 •

Carl J. Malmfeldt of Hartford, Conn., died on May 26 after a long illness. He had been a prominent architect for more than 30 years in Hartford where he designed the first low-cost housing project for the city in 1939. He was responsible as well for the design of several well-known Hartford buildings such as the Caledonia Insurance Company building. — It is with regret that we also note the passing of Benjamin P. Bakewell on April 25, of a brain tumor.

Albert F. Hegenberger is now chief of an atomic energy section at Air Force headquarters in Washington. — Paul Bertelsen's daughter Nancy was married to Signor Lucio Masseroni of Milan, Italy in the late spring. — Robert C. Erb spoke to a graduate group of engineering administration men on May 25, discussing managerial problems and practices in the shoe industry.

The 1948-1949 report of the Alumni Fund shows the Class of 1917 with a score of 112 per cent on its quota of contribution, and a score of 109 per cent on its amount quota. These are fine figures, and should encourage us all to start the new year off with an indication that we are keeping them high. The Class of 1917 is below 1897, with 100 per cent contributing 169 per cent of the quota amount, or 1907 with 97 per cent contributing and 126 per cent of the quota amount. The "7's" are tops in four early decades, and we are wondering if it isn't a lucky number after all with, in this case, special prerogatives and special obligations.

Win Swain is in reasonably good health again and has set up as an engineering and economic consultant. Win has had a long bout with stomach ulcers which made him keep very quiet. His new title and address are: Winthrop C. Swain, Engineering and Economic Consultant, 68 Devonshire Street, Boston. He tells us the new work is shifting his calluses. — Charles Gilliard resigned as town engineer of Andover as of September 1. He has been assistant superintendent and superintendent of the board, and town engineer for 27 years. — Roger Putnam was awarded the honorary degree of doctor of laws by Boston College in June.

Old Exonians, especially, would have been thrilled by the wedding in Phillips Church at Exeter, N.H., on August 18, of Phil Hulburd's daughter, Lucy, to James Richardson. Mr. and Mrs. Richardson, after October 1, planned to make their home at Holpeth House, Corbridge-on-Tyne, Northumberland, England. Noted among the guests was Ed Woodward. Phil told us that he had been on a sabbatical year during which he had seen Lin Noyes and I. B. McDaniel. Lin had not been too well, but I. B. has apparently gone west and is having a grand time in spite of the loss of most of his avocado orchard. Phil says that he himself is in the best of health, and he certainly looked it, even discounting the paternal smile of the man who gives away the bride at a happy wedding. He had been spending the summer at his summer place in Meriden.

The following attended the Alumni Dinner last June: Walt Whitman, Win McNeill, Lew Sanborn, Stan Hyde, Walt Beadle, Henry Strout, Rudy Beaver, Bill Dennen, Ray Brooks, Stan Dunning, Ted Bernard, Clarence Holt, Ray Stevens, Al Lunn, and Lobby.

The latter presented his second annual report as executive vice-president of the Alumni Association at the May 23d meeting of the Alumni Council. George Dandrow '22 as president of the Council made an enthusiastic reference to the Executive VP's accomplishment and referred to a precious characterization of Lobby as "the quintessence of Dynamic Immobility."

Johnnie DeBell is now in Japan for approximately a month on business connected with the rehabilitation of a portion of the Japanese plastics and chemical industry. — RAYMOND STEVENS, *Secretary*, 30 Memorial Drive, Cambridge 42, Mass.

• 1919 •

On Friday, June 24, Buzz de Lima was host of a luncheon party in his penthouse on top of the Winthrop Hotel from 12 till 3. Present with their wives were: George C. McCarten, Don Way, Will Langille, Fred Given, Jim Strobbridge, Jacob Lichter, and E. R. Smoley. Also in attendance were: Ellsworth Paterson, Dusty Rhodes, Jacob Braverman, Karl Rodgers and Buzz de Lima. On this very hot day, a beautiful breeze blew through the penthouse and made the surroundings as comfortable as they were pleasant for this party. A buffet luncheon was served which consisted of lobster salad, shrimp salad, potato salad, tongue, ham, turkey, and beef cold cuts,

lemon chiffon pie, fresh fruit cup, iced tea and iced coffee.

The Class then drove to Norwich, Conn., for the stag reunion. Classmates sat around on Friday cooling off and getting together; had an informal supper and then did some more talking until around midnight. On Saturday morning after breakfast, the various activities got under way with about half playing golf and the balance pitching quoits, shooting bow and arrow, and everyone putting around the 18 holes of putting green. When the day was done, the following awards were made: *Golf*: Low gross, Gene Smoley; Second low gross, George McCarten; Low net, Ben Bristol; Nearest the pin, E. Paterson; Second nearest the pin, Karl Rodgers; Least putts, Paul Blye; Kickers, Fred Given. *Putting Contest*: First, Rod Bent; Second, Jacob Lichter; Third, Wirt Kimball '18. *Archery Contest*: First, Jim Strobbridge; Second, Al Richards. *Quoits*: First, A. McMorran '21; Second, Marshall Lee. Door prizes were won by Harry Kuljian and Maurice Goodridge. The banquet was the high spot of the reunion with McNally playing the accordion and piano to lead the active class singing and the five Hollywood singers of radio and screen fame rendering an excellent variety of good songs. Beer mugs designed by Otto Muller were the souvenirs of the occasion. Will Langille was acclaimed as chairman for the 35-year reunion and some discussion was presented on the possibility of a mixed reunion.

The ninth annual report of the Alumni Fund for the year 1948-1949 shows the Class of 1919 as having 86 per cent of the quota of the number of contributors and 57 per cent of the quota amount. Our Class Agent is George W. McCreery with William H. Banks, Associate.

Mail was received from Leo E. Beaulieu, Holyoke, Mass., who states that he is still automatic heating distributor, appliance dealer and electrical contractor. Wayland S. Bailey is still at the Institute testing materials. His youngsters were on Star Island, 12 miles off Portsmouth, for the summer. David, six feet, two inches tall, is now a senior at Thayer Academy and Connie, 21, is now a senior at Radcliffe. Louis A. Brown, Jr., IV, has been devoting his time to management counsel-construction cost control, budgets, and so forth, and has a major responsibility for the management of the magnificent new Motion Picture Country House and Hospital at Woodland Hills, Calif., as administrator of that project. He also does some ranching. One of his sons is in the United States Air Forces overseas on the Berlin Airlift and daughter and wife manage their Tee-Square Ranch at Palmdale, Calif. Ben Bristol dropped your Secretary a line from Foxboro and said he visited with Wirt Kimball '18 recently. Ben sent some snapshots of the 30-year reunion which came out quite well. Daniel H. Brown from Lebanon, N.H., had a visit from Hy Selya recently. Lester Wolfe left for a visit to Japan on business during the latter part of the summer.

Your Secretary lunched with Otto Muller in July, and learned from Buzz that Virginia de Lima, a present Class of 1919 baby, was born on July 18. Cutter

P. Davis dropped in during the summer. Your Secretary was out and regrets not having seen him. Jim Strobbridge called several times, and conversations with Will Langille regarding the reunion found him very busy.

The *Christian Science Monitor* of May 10 carried a photograph and story of Oscar A. de Lima presenting the annual award of the American Association for the United Nations to Dr. Ralph Bunche, United Nations mediator for Palestine. Others in the picture were Mrs. Franklin D. Roosevelt, Mrs. Bunche and Trygve Lie, Secretary-General of the United Nations. — The July 8 *Bronx Record and Times*, New York City, carried a story titled, "Help-Yourself-Designs Aid Hospital Facilities." Trustees of the Peter Bent Brigham hospital have completed arrangements for installing 32 "minimal" private room units for this hospital. These units are like pullman car roomettes with facilities for controlling daylight and artificial illumination, two way communication system with the nurse's desk in the corridor and other novel ideas all designed by Frederick E. Markus of our Class and Paul F. Nocka '29.

The Salem, Mass., *News* of July 12 and 15 carried a story on Arthur C. Kenison's speech at the Rotary club on "Estate and gift taxes and the marital deductions." — Mary E. Pilliard of Loomis, Calif., and Arklay S. Richards of Newton Highlands were married on June 29 at the Congregational Church in Loomis, Calif. After a two-weeks' motor trip through the west, they returned to reside in Waban.

Paul F. Swasey has moved to Spring Green, Tunstall, Va. Roderic M. Blood has moved to 92 Prince Street, West Newton 65, Mass. Clarence S. Brehaut has moved to Rural Free Delivery Number One, Palermo, Maine. Blake Darling's address has changed to Empire Ranch, Post Office Box 450, Carson City, Nev. John M. Erving has moved to 23 Linwood Drive, West Hartford, Conn. Kenneth Pike's address is now Box 1736, Santa Fe, New Mexico. Merritt P. Smith has moved to 9015 Alton Parkway, Silver Spring, Md. Henry R. Whiton has moved to Apartment Three, 9 Malvern Avenue, Richmond, Va. Herbert F. Young has changed his address to Post Office Box 324, South Laguna, Calif. Lansing M. Quick's address is Box 140 H, Route Two, Birmingham 9, Ala. Eleanor B. Newton of Norwich, N.Y., is now Mrs. Robert Abel of 6 West Cedar Street, Boston 8, Mass. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 420 Lexington Avenue, New York, N.Y. ALAN G. RICHARDS, *Assistant Secretary*, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

• 1920 •

Here's hoping that you all survived this hot and hectic summer season and are already pointing toward our grand and glorious 30th reunion which will take place next June at the Sheldon House, Pine Orchard, Conn., starting on Friday, June 9 and winding up in Boston at the Alumni Day and Alumni Banquet on June 12. Your reunion committee under the capable direction of Al Glassett is already functioning and making plans for the big-

gest and best yet. Mark those dates down in your 1950 calendar and don't let anything else interfere.

It was pleasant to receive announcement of the marriage of A. A. Brown's daughter, Mary Josephine, to W. V. Holik, Jr., on August 20 at El Paso, Texas. Further news of A. A. Brown and of C. M. Syner, who, so far as we know, are still in the mining business in Mexico, would be most gratefully received.

Lauren B. Hitchcock has resigned as vice-president of the Quaker Oats Company and is now director of research and development of National Dairy Products Corporation and president of National Dairy Research Laboratories, Inc., 230 Park Avenue, New York City. Now that L. B. has come east, we should certainly expect to see him at the reunion. Archie Cochran, founder of the Cochran Foil Company, was recently elected a member of the First National Bank-Kentucky Trust Company Board of Directors. Archie, a native of Louisville, is a director of Brown-Forman Distillers Corporation and of B. F. Avery and Sons. We all would certainly like to hear from him directly. Don Kimball has been made general superintendent of the paper departments of Eastman Kodak Company. Irving Wilson has been made superintendent and engineer in the Wire and Insulation division of General Electric Company River Works. His home is at 17 Larch Road, Lynn, and he is business advisor of the Lynn Junior Achievement Group. Norrie Abbott appeared in the news last June when he was the speaker at the commencement exercises of the Tabbutt-Hubbard School of Pawtucket. Norrie is president of the Greater Providence Young Men's Christian Association and a member of the National Office Management Association.

Arthur Dopmeyer's new address is 6 Richards Circle, West Newton, Mass. Simon Freed has left Oak Ridge and is now with the Brookhaven Laboratories on Long Island. Colonel Edmund C. Sullivan is with the United States Public Health Service in Atlanta, Ga. Ben West has left these parts and is in Tampa, Fla. George Corr has left New Haven and moved to Brockton, Mass. Freeman Dyke has left Steubenville, Ohio, for Santiago, Chile. Harold Dennison is now living in Weymouth Heights. Louis Harris, who has been a professor at M.I.T., has gone to Wilmington, Del., address, 3201 Washington Street. Bob Hayler, a rear admiral, is now in Charleston, S.C., at the 6th Naval District Headquarters. Ray Perry has left Chicago and is in Englewood, N.J. Ed Westfall has left Washington and is in Aptos, Calif. Lyman P. Whitten, major general, U.S.A., is with the Newfoundland Base Command. Phil Young is now at 575 Highland Avenue, Westfield, N.J.

All of us were shocked at the sudden and untimely death of Chick Dana on June 13 just after Alumni Day. We caught a glimpse of Chick at Alumni Day and he seemed to be his usual genial and personable self. His passing is a severe loss to the Class. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

Welcoming all who meet on these pages for the nine issues of the current season is one of the most pleasant duties of a Class Secretary. On this 29th such occasion, sincere greetings include an invitation to share your news and views, that this column may better serve as an interim reunion center until 1951.

Some 40 persons, including 28 members of the Class, represented 1921 at last June's Alumni Day events. Again, the high spot was our informal afternoon meeting of classmates, their wives and guests just prior to the banquet. Saul and Mrs. Silverstein were bountiful hosts. Bob Miller brought his revised class photographic history. Chick Kurth handled the showing of slides and movies. Vic Homerberg, Vic Phaneuf and Jack Rule assisted in maintaining a nontechnical atmosphere. Helier and Graciela Rodriguez of Havana came the greatest distance for the fourth consecutive year. Among those welcomed back to the fold was Roger Clapp of Florida and western Massachusetts, scion of a famed New England family who took time out from the Charles River Community Sailing Association to attend the day's events.

The Alumni Day registration included Roger Clapp, Cac Clarke, Josh and Mrs. Crosby, Ed Delany, Chick Dube, Harry Goodman, Sumner Hayward, Roy Hersum, Vic Homerberg, Mel and Mrs. Jenney, Murray and Mrs. Jones and son, Malcolm, Chick Kurth, Ed and Mrs. Lockwood, Ted McArn, Ed MacDonald, Dick McKay, Charlie MacKinnon, Bob Miller, Phil and Mrs. Nelles, Warrie Norton, Vic Phaneuf, Ed Praetz, Antonio and Mrs. Rodriguez, Jack Rule, Ray and Mrs. St. Laurent and nephew, Wilfred St. Laurent '51 and guests Mr. and Mrs. Robert P. Landis, Saul and Mrs. Silverstein, Whit Spaulding, and Henry Stillman.

Sumner Hayward, Ed Lockwood, Helier Rodriguez and Jack Rule also attended President Jim Killian's dinner for Honorary Secretaries and M.I.T. club officers. Representing the Alumni Fund Board, of which he has been chairman for the past two years, Warrie Norton spoke at the dedication ceremonies formally opening the new dormitory on Memorial Drive. The annual report of the Fund says that Warrie will continue as a member of the board and adds: "He has done an able and conscientious job, and deserves the whole-hearted thanks of all alumni." Among the gifts reported for the year was an addition to the scholarship fund established in memory of the late John A. Grimmons.

Warrie Norton was also present at commencement in his capacity as a member of the Corporation of the Institute. Among those graduated were the three seniors of the group of 20 sons of members of the Class attending Technology, John Barriger, IV, Gary Colton and Malcolm Kurth.

For those living at a distance, the Alumni Association has announced that the next two Alumni Days will conform to prewar custom and occur on Mondays; namely, June 12, 1950 and June 11,

1951. The latter date will probably be the closing event of our 30th reunion. The announcement includes a change in the locale of the Alumni Day Banquet to the grand ballroom of the Copley Plaza, due no doubt, to the plugging we have done in this column for the outstanding Sheraton hotel chain, headed by Ernie Henderson and Bob Moore. Credited with being the world's largest, the Sheraton Corporation is reported to have expanded even further with the purchase of three Ford hotels, to give the chain 28 modern hotels in 25 United States and Canadian cities. A feature story in the *Boston Post* tells how Ernie and Bob bought the Continental in Cambridge 12 years ago and built up a sixty-five million dollar enterprise with ten thousand stockholders. Ernie, president of the company, lives in Lincoln, Mass., has a family of five children and recently became a grandfather. He is an accomplished musician, numismatist and photographer. Vice-president Bob of Concord, Mass., has four children and is also a grandfather. His hobby is golf.

The annual publication, "The Technology Bookshelf," lists two volumes by members of the Class. Vic Homerberg, Professor of Physical Metallurgy at the Institute, has collaborated with Dr. R. S. Williams '02 in authoring the 5th edition of *Principles of Metallography*, published by McGraw-Hill. Wiley has published a book entitled *Specifications and Law on Engineering Works*, by Walter C. Sadler, Professor of Civil Engineering at the University of Michigan.

Irv Jakobson, who heads the Jakobson Shipyard, Inc., of Oyster Bay, N.Y., builders of yachts and commercial craft, sent the first letter from the secretarial committee, saying he met a few of our sea-going classmates last summer while cruising on his sloop, the *Dowsabel*. Jake reports: "At Price's Bend, I met Tony and Mrs. Anable and Dan Harvey on board the ketch *Seven Bells*. At Southport, we exchanged visits with Fred Adams, his charming wife and his son, on his *Ariel*. Many M.I.T. men seem to have turned to the water for periods of relaxation. I have just accepted the chairmanship of the committee for the annual dinner of the M.I.T. Club of New York, to be held on December 6 at the Hotel Biltmore. It promises to be a top notch affair and I hope there will be a large attendance by the 1921 group. At the yard we have recently launched the first of four new diesel electric tugs for the Lehigh Valley Railroad. These are powerful tugs for handling the large car floats operating in New York harbor. Each vessel is powered with a General Motors diesel electric engine of 1350 shaft horsepower."

Dugald C. Jackson, Jr., and Mrs. Jackson announced the marriage of their daughter, Elisabeth Wyer, 2d, to John Webster Seabury. Writing from Hillside Farmhouse, R.F.D. 2, Darlington, Md., Dug says: "Third down and one to go. Dugald, 3d, married Vyola Tabet of Fond du Lac, Wis., whom he met while they were students at Northwestern. They have two children, Dugald, 4th, and Charles, and live in Schenectady where

Dugald is employed by General Electric in quality control of ordnance equipment. David married Helen Pierpont of New Haven, the sister of one of his Yale classmates. He took electrical engineering and is with Jackson and Moreland in Boston. Now Elisabeth has been married to a mechanical engineer with Worthington in Holyoke, Mass. This leaves only Daniel, who is a senior at Lehigh where he is taking electrical engineering."

A note from Andy Maclachlan of Wattertown, Mass., tells of the unusual ability of his daughter in public speaking. Mary won first prize in the Liberty Medal prize speaking contest at Cambridge Latin and High School.

Many clippings and a letter from Clate Grover '22 tell of the promotion of Philip T. Coffin from assistant district sales manager in New York for the Aluminum Company of America, to product manager of pig and ingot sales and manager of the warehousing division, with headquarters in Pittsburgh. A fellow resident of Glen Ridge, N.J., where he and Mrs. Coffin have been active in municipal affairs for 20 years, we will miss the family in their move to Mt. Lebanon, Pa. Phil joined Alcoa in 1926 following his association with Public Service of New Jersey in the design of transmission lines. During the War, he was works manager of the huge aluminum plant on Long Island. Elected to the board of education of Glen Ridge, he was serving on a special lighting committee and had also been active in the Scouting movement. The Coffins have five children, three of whom are now in college.

Raymond C. Fisher, research engineer for Boeing Aircraft Company, Seattle, was married to Mrs. Margery L. Charnley of Tacoma. They are making their home at 947 Harvard Avenue North, Seattle, Wash.

Word has been received of the passing of five of our classmates and sincerest sympathy is extended to their families on behalf of the entire Class. Leonard P. Wood '01 of the New York City Bureau of Water Supply has kindly sent us a copy of the *Delaware Water Supply News* with a detailed history of Edward M. Craig, Jr., who passed away last June 9. A graduate of Washington and Lee and of Yale, he received a degree in Sanitary Engineering with our Class and subsequently served as sanitary engineer with the Rockefeller Foundation, the Alabama State Board of Health, the North Jersey Water Supply Commission and, since 1927, a member of the New York Board of Water Supply in numerous engineering and editorial capacities. Mrs. Craig, a sister and two brothers survive. The Alumni Office has advised that Howard L. Face died on March 19 at his home in Marshfield, Wis., and that James Hays of Youngstown, Ohio, died on September 14, 1948, but no further details are available. Raymond L. Presbrey, Vice-president and Chief Engineer of the Boston Consolidated Gas Company, died at his home in Dorchester, Mass., on September 8. A native of Taunton, he joined the gas company as a cadet engineer following our graduation. He was a member of the American Gas Association

committee on production research, a director of the New England Gas Association, and a member of the Guild of Gas Managers. He leaves his widow, Mrs. Josephine Cheney Presbrey, and a daughter, Mrs. Richardson Leverich of Chicago. Lawrence L. Willard of North Scituate, Mass., died on July 28 after a long illness. A Navy veteran of both World Wars, he retired with the rank of commander from World War II after having charge of construction in Alaska and at the Samar base in the Pacific. He was recently associated with the Carlos Bianchi Company in the construction of the Almond Dam at Hornell, N.Y. Besides his wife, the former Alice Anderson, he leaves a son, Thomas, who is six, a daughter Ann, ten, a sister and a brother. Sincere sympathy is also extended to Robert E. Waterman, Vice-president of the Schering Corporation, Bloomfield, N.J., on the loss of his father, who was an early associate of Thomas A. Edison in the manufacture of phonographs.

Promotion from brigadier to major general has been announced for Edgar E. Hume of the United States Army Medical Corps. Grover C. Klein has been promoted to rear admiral, United States Navy, and assigned to the Bureau of Ships, Washington, D.C. Recent additions to the ex-brass division are Ludson D. Worsham, former brigadier general, who is now with the Ralph M. Parsons Company, Los Alamos, N.M., and Robert B. P. Crawford, former commander, who is in Los Angeles with the Standard Steel Corporation.

The Alumni Office has notified us of the change in class affiliation of Edward R. Schwarz, Professor in charge of the Textile Technology Section, Department of Mechanical Engineering at the Institute, and we extend to him a hearty welcome. Along with Walter Fife, Vic Homerberg and Jack Rule, the Class now has four members on Technology's faculty.

During the summer, various meetings on class affairs have brought together our Class President Ray St. Laurent, Zam Giddens, Dan Harvey, Chick Kurth, Jack Rule and your Secretary. You have received a letter from Zam concerning the class gift and scholarship fund and it is hoped that your reply has already been sent to him at his home address, 47 East 88th Street, New York, N.Y. Ray and Helen have spent their leisure time down on the Maine coast. Ray reports that Joe Gartland's son, Pete, has entered Dartmouth this fall. Dan is scurrying around providing revolutionary new types of valves and automatic ice cube freezing equipment. Zam's talented wife, the well-known apparel designer Janet Taylor, was among those singled out by *Time* magazine in a recent article on fashion illustrating. Chick recently gave an address on production, transmission and distribution of electric power at the formal dedication of Boston Edison's new 81,250 kilowatt turbogenerator and also appeared in the televised program. He attended the sessions of the accident prevention committee of the Edison Electric Institute in Newark, N.J.

Sumner and Mrs. Hayward celebrated

their 25th wedding anniversary with a trip to Yosemite and the West Coast. Their daughter, Priscilla, has entered Swarthmore. Kenneth M. Moore, a colonel in the United States Corps of Engineers, is now in charge of the Granite City Engineer Depot, Granite City, Ill. Rev. Dr. Williston Wirt, one of the two ministers in the Class, has left Chula Vista, Calif., to accept a new pastorate in Berkeley. William C. Ready, a lieutenant colonel in the United States Corps of Engineers, is now in Washington with the Army's Beach Erosion Board. Arthur L. Silver is in Philadelphia where he is an executive with N. Snellenburg and Company. New addresses have also been received for John W. Barriger, O. Kenneth Bates, Robert S. Cook, Edwin F. Delany, Samuel T. Drew, Robert B. Frost, Russell C. Johnson, Charles E. Mendinhal and Edward M. Richardson. Your Secretary will be glad to forward mail to any members of the Class for whom good addresses are available: — CAROLE A. CLARKE, Secretary, International Standard Electric Corporation, 67 Broad Street, New York 4, N.Y.

• 1922 •

While the turnout at Ros Sherbrooke's place in Cohasset the afternoon of June 11 was not large numerically; nevertheless, the group there had a very pleasant time. We would like to try it again next year but with a much larger crowd. Those present were our host Ros Sherbrooke, Bob Tonon, Randy Myer, Bob Brown, Whit Ferguson, Jim Duane, Morris Gens, Clate Grover, Fred Brittain, Parke Appel, Walt Kirley, John Vaupel, George Bailey, Bill Freeman, Stu Dimmick, and Yard Chittick.

Those at the Statler in the late afternoon before the Alumni Banquet were Stu Dimmick, Clate Grover, Morris Gens, Dewey Godard, Ros Sherbrooke, Whit Ferguson, Bill Freeman, Randy Myer, Bob Tonon, Milt Manshel, J. Sterling Kelley, Parke Appel, Everett Howe, John Vaupel, and Warren Ferguson. George Dandrow must have been on the premises someplace, but he did not sign the list. Due to younger son's graduation from Newton High School the evening of June 11, your Secretary missed the banquet and is unable to report on those present. At a guess, most of the above, and a few more attended.

On June 24, Donald F. Carpenter was awarded the National Military Establishment Certificate of Appreciation. It was presented to him by Secretary of Defense Louis Johnson in the Secretary's office in the presence of a large group of distinguished guests including officials of the Military Establishment and members of Congress. The citation stated: "Donald F. Carpenter, for exceptionally meritorious service to the National Military Establishment from April 8, 1948 to June 24, 1949. At the request of the Secretary of Defense, Mr. Carpenter left his civilian occupation to assume the Chairmanship of the Military Liaison Committee to the Atomic Energy Commission. In this capacity Mr. Carpenter demonstrated unusual tact and ability in developing mili-

tary atomic energy programs and under his guidance and direction military atomic energy activities were materially furthered. In September, 1948, Mr. Carpenter was appointed by the President to serve as Chairman of the Munitions Board. Faced with unprecedented problems in supply, distribution, storage and procurement, Mr. Carpenter showed remarkable initiative and zeal in directing comprehensive studies and developing effective solutions. His service to the government is deserving of the highest praise." Among the invited guests were Cabinet Members Snyder, Krug, Sawyer, Gray, Matthews, and Symington, Generals Eisenhower, Bradley, and Vandenberg, Dr. John Steelman, Paul Hoffman, Admiral Denfield, Dr. Compton, Dr. Bush, and a substantial additional group of V.I.P.'s. Don's resignation as chairman of the Munitions Board was accepted by President Truman on June 22. He has now returned to the Du Pont Company in Delaware after having been on leave of absence from the Remington Arms Company, Inc., of which he was vice-president and assistant general manager.

Jim Nesmith writes that his daughter Nancy was graduated this past June from Duke University, majoring in economics, and received a B.A. degree. His daughter Joan is a sophomore at Cornell, taking a premedical course. Her address for the coming year will be Clara Dixon Hall, Cornell University. Son Jim is a sophomore in high school and has a leaning in the direction of Technology. Walt Saunders' eldest son, Norman W., has completed his third year at Harvard Medical School. He went to Technology for one year, then transferred to Dartmouth and graduated in 1947 before moving on to Harvard. Walt's second son, Preston H., has finished his first year at Dartmouth. The third son, Timothy K., is a junior at Manlius.

A note from P. C. Benedict says that he left on June 20 for Durban, South Africa, on an assignment which will keep him there for approximately two years. Ben's address will be found below in the new address list. His son, Risque Lindgren Benedict, graduated last June from the Institute. He, however, will stay in the States while his father "chases the ever elusive mine." Archie Robertson wrote a letter to your Secretary dated February 28, which finally arrived in June. He reports that life can be complex even in the wilds of Ontario. His address last February was "Chicken" (Lake), On The Opinagan, Via Moose Nee, Ontario. On July 21, Great Lakes Carbon Corporation announced the appointment of Samuel H. Reynolds as sales manager of the electrode division. While we don't have Sam's home address as yet, his company address is Pine Avenue at 58th Street, Niagara Falls, N.Y. Our congratulations to Sam on this new move.

On June 22, your Secretary received a very cordial note from George Clifford telling about the progress of his children. This was followed shortly thereafter by the distressing information that on July 22 George died suddenly from a heart attack suffered while in his sail boat at the Pequot Yacht Club near Bridgeport.

George had been manager of the technical division of the Remington Arms Company since 1945. He joined the organization as works manager of the Ilion, N.Y., gun plant in 1940. Later he was made assistant manager of the commercial production section, from which position he became assistant manager of the technical division. He later succeeded to the managership. All who knew George will miss him greatly. Our sympathy is extended to his wife and children of whom George, Jr., was graduated from Tufts Medical School last June and Alice was graduated from Swarthmore College. — Belatedly, we have received word of the death of Rev. Arthur M. Clarke on January 19. Clarke, at the time of his death, lived in Abington, Mass. After leaving Technology, he went to Gordon College of Theology receiving the degrees of B.A. and B.D. in 1927. Thereafter, he served at Huntington Baptist Church in Huntington, Vt., and the Baptist Church in Brockton. Following the War, he returned to Technology as a research assistant in Electrical Engineering in 1947. Our sympathy is extended to his family.

Bryant Essick, whose Essick Manufacturing Company has for a long time past sold construction equipment and air-conditioning apparatus, has recently purchased control of the T. L. Smith Company of Milwaukee, one of the largest and oldest manufacturers of concrete mixers in the country. Bryant now spends most of his time commuting by air between the Essick plants in Los Angeles and Little Rock and the newly acquired Smith plant.

Ed Gruppe's older daughter, Frances, majoring in sociology, graduated this year from Syracuse University. Ed's younger daughter, Elizabeth, graduated from Stephens College in Missouri last May. Edwin, Ed's son and only boy, graduated from high school in the spring and has started at St. Lawrence University this fall. If all goes well, he may finish at M.I.T. Ed is still with the Central New York Power Company at Syracuse and is honorary secretary for his area. He and Mrs. Gruppe are also to be congratulated on the celebration of their 25th wedding anniversary this year.

Frank Kurtz's older boy, F. Mason Kurtz, Jr., has started at Princeton this fall. His younger boy, Richard Compton Kurtz, is a junior at the Hackley School in Tarrytown, N.Y. This brings to mind that your Secretary, quite by chance, while cruising in Maine this summer, saw an old Andover classmate, Mitchell Grattwick, Harvard '22, who is now headmaster of Hackley School. From him, we learned that not only has Frank Kurtz sent his boys there, but also that Dave Minton and Sam Reynolds have done the same. — Lester Clark Lewis has sent a card from Germany reading as follows: "A summer in Europe with the whole family including one boy and three girls has been full as well as tops, considering our friends and haunts of 20 years ago when I was a student for the doctorate at Hamburg and we were honeymooning. Full of ideas, movies, photographs, and greetings to '22."

On May 6 in Washington, high government officials and industry representatives participated in dedicating the Harry Diamond Ordnance Laboratory at the Bureau of Standards, honoring its wartime electronics chief. Diamond, who died last June, was a pioneer in the development of aircraft radio, radio navigation aids, and proximity fuses. Secretary of Commerce Sawyer paid tribute to "the enthusiasm which he inspired in those who worked" with Diamond. A memorial plaque was unveiled at the ceremony in the new ordnance laboratory officially dedicating it to Diamond's memory. In the laboratory's conference room, another plaque was unveiled, listing Diamond's outstanding contributions to aircraft radio, meteorology, ordnance, and electronics.

Surprise! William Edward and Mrs. Bernard announced the marriage of their daughter Mary Lillian to John Henry Teeter on August 6 in Washington, D.C. The newlyweds are making their home at 247 East 68th Street, New York City, which is John's present address on the class records.

Raymond R. Stoddard died after a long illness last June. After graduating from Technology, he received a law degree from Philadelphia College of Law. Thereafter, he was with the Philadelphia Electric Company for a number of years and later was patent attorney for the Sperry Gyroscope Company. For the five years prior to his death, he was industrial power engineer for a number of the electric and gas utility companies in Massachusetts. The Class's sympathy is extended to his surviving wife and daughter.

Last June, David J. Abrahams was chosen by the Boston Society of Architects as having created one of the three best postwar examples of architecture originating from the offices of Greater Boston architects. Abrahams' winning design now appears in the *Stop and Shop Supermarket* on Memorial Drive, Cambridge, just below the B and B Chemical Company building. Not long ago, Dave was singled out for honors when an outstanding design for a modern house in Newton was given an award in the "Blueprints for Tomorrow" architectural contest held by *House and Garden* magazine. Dave's work has received national recognition over a long period of time. His designs have appeared in many of the national magazines including *McCall's*, *Good Housekeeping*, and *Architectural Forum*. Abrahams is a director in the Massachusetts State Association of Architects.

Edwin D. Martin of the Inland Steel Company of Chicago was awarded last June the American Iron and Steel Institute medal at the institute's annual meeting. Martin, who is assistant manager of Inland's metallurgical and inspection department, was honored for his paper on "Continuous Strip Pickling" delivered at the 1948 Institute meeting. — Fred Blackall continues to be very active in the New England Council. At present, he is chairman of the Council's iron and steel supply committee, which body has engaged a consulting mining and petroleum engineer and economist in metals to study the possibilities of an integrated steel industry for New England.

Douglas M. Burckett is president of the Appalachian Mountain Club. Doug, who lives at 89 Washington Avenue, Cambridge, is also president of the United States Eastern Amateur Ski Association which has some 7,000 members. Naturally, he is an enthusiastic skier in which sport he is joined by his wife and two daughters. When not engaged in these enterprises, he acts as an electrical engineer for the Boston and Maine Railroad.

Tom Shehan's column in the *Boston American* of August 20 last tells about the New England Racing and Show Pigeon Association which at that time was about to hold its annual young bird show. Shehan's authority on the material thereafter set forth in the column was Morris Gordon, our classmate, who has been chosen this country's All-American pigeon flier for the past two years and who will most likely be chosen again this year. Morris' business is that of treasurer and general manager of the Whitehall Company, Berkeley Street, Boston. — C. YARDLEY CHITTICK, *Secretary*, 77 Franklin Street, Boston 10, Mass. WHITWORTH FERGUSON, *Assistant Secretary*, 333 Elliott Street, Buffalo 3, N.Y.

• 1923 •

By the time these notes appear you should have the report of the nominating committee appointed at the 1948 reunion. The committee asks for answers on a ballot to the question of class officers and presents for adoption a class constitution. We have operated since graduation with a permanent set of officers and without any formal statement of governing procedures. The Alumni Association has suggested that classes elect officers at not less than five-year intervals and adopt a simple form of class government. So, read the nominating committee's report and send in the ballot promptly. Also, there is a practical reason to consider a new slate of officers in that they will be responsible for the 30th reunion.

More than 20 members of the Class showed up for one or more of the Alumni Day events on June 11 including a good many regulars. The following is probably not a complete list, but those present include: Ben Albert, R. D. Brown, Chan Clapp, Joe Fleischer, H. B. Golding, Louis Greenblatt, Frank Haven, Don Height, Ray Holden, Ab Johnson, George A. Johnson, E. E. Kattwinkel, Forrest Lange, Howard Russell, Dave Skinner, Roy Sterling, Dorothy W. Weeks and Jack Zimmerman. With their wives were Dean Burchard, W. S. Wise and your Secretary.

Howard Russell, Mrs. Russell and their son, Roger, got together with Mrs. Bond and me two times this summer when we were both at Cape Cod. I ran into Bill LaLonde, his wife and son, in Boston during August. They were on their way to spend some time with Jim Robbins and his family who have a place in Washington County, Maine, near Camp Technology. Jim and Bill are both professors at the Newark College of Engineering. Course I men probably know that Jim recently revised and rewrote *Engineering*

Astronomy, originally authored by the late Professor George Hosmer '97.

Bobby Burns, another Course I man, has for many years been in charge of the government hydrographic laboratory at Ceylon, where rainfall is a real problem. He called me up in Boston in May to say that he was back in the United States and working for Knappen Tippetts Abbott Engineering Company in New York City. I was on the West Coast at the time so I missed him. On September 4, I had a letter from him from Ankara, Turkey, in which he brought me up to date from August, 1948, when I had seen him during a visit he made to Boston. Here are a few quotes from his interesting letter: "From that (1946) date onward, I was very busy (after his return to Ceylon) with the design for several detention reservoirs, flood control drainage and irrigation works as well as research connected with these designs. From February, 1948, to March, 1949, I had 4,000 men and a lot of American construction plant at work trying to put on the ground what already existed on paper. On March 31, I retired on pension from the Ceylon Government service, taking advantage of the option given to all senior officers as the result of the change of government. It was also necessary to leave the island as my wife's health was not too good. We left Ceylon on April 23 and arrived in Boston on May 18 this year. Art Stuckey, Pete Pennypacker and I had a very pleasant evening at Pete's home (in Quincy) shortly after our return. Did you know that Art got married recently? Well, he did, much to the surprise of all of us. He is looking very well, indeed, and is still with Stone and Webster Engineering Company, but in St. Louis instead of the Pacific Coast. Well, Bondy, I joined up with the above company on June 1 and flew out here from New York on June 11, via Gander, London, Brussels and Istanbul, arriving here (Ankara) on June 13. Since then I have been to Izmir and Manisa, near the Aegean Coast; for the past 70 days I have been in Manisa. We are making a study of river valley improvement on the Gediz River which empties into the Aegean Sea near Izmir." He concludes by saying he hoped to stop over in Boston in September.

The summer crop of notes includes, I regret to report, three deaths. A. F. Flournoy of Shreveport, La., died December 17, 1948. Loran Ellis, New York architect, died on June 30. He leaves a widow. The Rev. J. Harold Mumper died of cerebral hemorrhage on August 2. He was an official of the United Lutheran Church of Philadelphia and leaves a widow and two daughters.

There are several news items about graduates of the Course in Naval Architecture and Marine Engineering. Horatio C. Sexton, captain, U.S.N., has been commanding officer of the Navy Yard at Charleston, S.C. In June, he assumed duties as supervisor of shipbuilding at the Groton plant of the Electric Boat Company. He and his wife have three children and will make their home at Mystic, Conn. — Paul B. Nibecker, rear admiral, U.S.N., has been chief of Industrial Relations in the Office of Undersecretary of the Navy.

In July, he became commander of the Brooklyn Navy Yard, and world's largest naval shipyard. — Ralph W. Christie has been general inspector, Western Sea Frontier. He retired in August as a vice admiral and plans to live in California.

Palmer C. Putnam was married in June at Lincoln, R.I., to Mrs. Helen Bradley Head. The couple planned to spend the summer at Southwest Harbor, Maine, Putnam's summer home. He is a special consultant to the United States Atomic Energy Commission. — Stephen R. Kiehel reports that his daughter, Janet Read Kiehel, Vassar '47, was married on June 11 at Chesterland, Ohio, to Owen Winthrop Roberts, Princeton '48. The couple will live at Camp Shanks, N.J., Roberts continuing at Columbia Law School.

When the United States Senate was trying to find out about the reportedly "lost" uranium last May, a New York Times story mentioned that Senator McMahon had obtained the services of Ernest W. Thiele to check the testimony and technical details with regard to the uranium loss. Dr. Thiele is assistant director of research for Standard Oil Company of Indiana. — Kenneth G. Crabtree has been promoted to professor of Electrical Engineering at the University of Maine. — Lewis Newton Brown, after 15 years with New England Coke Company, has joined the Metropolitan Coal Company, and is at the office of that company in Medford. He is married and lives in Brookline.

The Hingham Weekly Journal devoted a "Birthday Greetings" column in May to Kilburn Miller Smith who is assistant planning engineer for the Commonwealth Edison Company of Chicago. He has been with that company since graduation, is married and lives in Chicago. — The Needham Weekly Chronicle devoted space in May to the career of Hilton W. Long describing his service as an air force officer in World Wars I and II. It reported he is building a real estate office in Needham to carry on a business formerly conducted from his home in Dover. He is married, has two children, Charles, 9 years old, and Andrea, 6 years old.

According to the Danvers Herald, a local concern has been given the job of putting into production an "all-purpose" golf club. Such a club has always been the dream of mechanical minded duffers and hackers. This, the Simplex All Way, as the club is trademarked, has adjustable length shaft, done by a twist of the wrist, and a head that can be turned in any way and set by marked positions to equal the angles of the clubs of a usual set. Telescoped, the shaft is slightly more than two feet in length and it can be extended so that even a tall man can use it. It was invented by Rodger Brouwer, who is sales engineer for the New Departure Coaster Brake Company, of Bristol, Conn. Following an accident to his back a few years ago, he found it difficult to carry a full set of clubs so designed his own, which he sold to the Danvers concern. — HORATIO L. BOND, Secretary, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, Assistant Secretary, Improved Risk Mutuals, 60 John Street, New York 7, N.Y.

• 1924 •

By the time this issue appears you should have received your copy of our post-reunion News Letter which covered the affair rather thoroughly. So we will start this column from there.

You may remember that Herb Stewart, in our 25-year report, said that "A glance at the notes . . . will show the hard-working class secretaries devoting up to a third of their column-inches to pleadings for news." Your new Secretary is going to change all that. If he doesn't get any first-hand news from you fellows, he'll relay a few rumors, or maybe start some himself. So it's up to you to keep the record straight.

Let's start off the fall by glancing through a few clippings that have accumulated over the summer. Last time Hank Simonds dropped by he said he had tried in vain to find some trace of Joe Young on his last trip to China. Then lo and behold, all those weird posters began to appear billing "Mighty Joe Young." The portrait didn't look like the Joe we remembered, but 25 years is a long time. And then sure enough, up popped Joe himself, back to the old home town of Holyoke, Mass. He left his wife and five daughters (the Canton Cantor) back in China, but Joe says he may bring them on and stay in this country.

Cliff Bailey spent a part of the summer at Fort Bliss, Texas. The Colonel's reunion week end was probably good introductory material for the guided missiles course he took down there. Cliff's a Du Pont man, you may remember. Another of his co-workers got a bit of press in the Salt Lake City Tribune, Hood Worthington. Headlined, "Career Made of Nylon — Nobody knows the wonder material of the 20th century better than this former Salt Laker," it went on to say that "long-winded chemical formulas, mysterious bubbling reactions, and even uranium are familiar subjects to him."

Ernie Guillemin has another book out, *Mathematics of Circuit Analysis*. It is the fourth in a series by members of Harold Hazen's Department of Electrical Engineering at M.I.T.

Blay Atherton has once again thrown his hat in the ring, as candidate for the State Senate. He has been a member of the Great and General Court of New Hampshire for many years, and has held enough committee jobs to last any ordinary man a lifetime.

The first woman to serve as pastor of the Church of God Fellowship in Casco and Naples, Maine, is none other than the Rev. Gertrude G. Harris. She made the transfer from her former pastorate in Danforth, Maine, this summer. — And the firm of Chapman and Evans, New York City architects, announced late this spring that henceforth they should be addressed as Chapman, Evans and Delehanty. That's Bill, of course. — Another military note: Colonel I. Henry Stern has been named commanding officer of the 1175th Guided Missiles Training Battalion of the Org. Army Reserve Corps in Massachusetts. How the Coast Artillery has changed. And one more Colonel, Bill Sturdy, finally made it to the presidio after his stopover

at East Bay Lodge. He has a typically terse army title, chief of communications division of the signal section at Headquarters, Sixth Army. Bill's son, Bob, is a sophomore at the Institute.

Wonder how many of you noticed the entry in our 25-year report for George Swift under "Rel. at M.I.T."? George has three Institute degrees himself to start with, S.B., S.M., and ScD. Then he has three brothers with a total of five degrees among them; and to top it off, his wife is S.B., '41! Since his children are only two and five years old, no report on them as yet. That ought to be a record.

For the benefit of those of you who get a chance to drop in and say hello, all the Alumni offices have been moved. We're in Building One now, in part of the space left vacant when Professor Schell moved to the new library. Stop in at 1-272 anytime. The news clips have run out. Next month, the rumor factory, in all probability. — HENRY B. KANE, General Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1926 •

Your new Class Secretary is starting this issue of class notes during vacation at Pigeon Cove, Mass. You will probably be hearing more about this place as time goes on because I spend every week end here and it is very likely that most of the '26 notes from now on will be put together here. We have a little place on a cliff overlooking the sea, and the atmosphere is conducive to contemplation, or whatever is necessary to write class notes. Jim Kilian is an occasional visitor at a small inn here in the cove (which actually is a part of Rockport) and Pete Doelger checked in at another hotel here several times this summer when the weather in New York became unbearable. Larry Cumming has a place at nearby Rocky Neck and also retreats from New York at the drop of a hat. Larry became technical secretary of the Institute of Radio Engineers after leaving the Navy where he was engaged in research and development of airborne electronics and guided missiles.

Last spring, we saw a handsome yacht being launched on the back beach at Rockport, and only this week learned that it was a 36-foot ketch, which had been built for Austin Kelly. It took two years to build the boat and all spring to fit it out, then in the latter part of June, Austin came to Rockport and sailed it down to Larchmont. One week later, Austin was caught in the 80-mile-an-hour wind that upset hundreds of boats in Long Island Sound, and the wind came up so fast that he was unable to get his sails down before the ketch turned over, spilling Austin with a friend and his eleven-year-old son into the water where they were afloat for 45 minutes before being rescued and taken to the New York Athletic Club. The yacht sank and every effort to locate it has been unavailing. Like a true sailor, however, Austin is looking for another boat so that he can take a cruise to Maine this fall.

After writing the story of his boat misfortune, Austin continued with some notes about '26 men which I hope will set an example for others in the Class. Austin's brother, Bird, is now with Johnny Drum

as regional manager for his company in Muncie, Ind. Johnny Walker drops in to see Austin occasionally and is now with the export division of the Government. Hump Barry is in the labor relations department of the Atlas Cement Company with offices in the Lincoln Building in New York. Charlie Snow is with Charlie Bianchi at Cohu and Torrey down on Wall Street, heading up their statistical and research department. Doug Jeppe dropped in to see Austin about a year ago when he was in New York on a visit from Tulsa, Okla., where he is connected with Phillips Petroleum Company. Doug, incidentally, married a girl that he met while at the Institute. Dan McGrew is now connected with the American Foundation, and Adon Smith, 2d, who was in New York recently, was reported by Austin to be the most successful pension expert in the south. That really was a nice bit of reporting from the New York area — keep 'em coming, Austin!

Alumni Day, this year, had a special significance for our Class, because it was the first Alumni Day with Jim Killian as president of the Institute. It would have been a very busy day for Jim in any event, but Dr. Compton became ill, and since he was to share the speaking program at the Alumni Banquet with Jim, this left Jim as the principal speaker of the evening, and, of course, as always, his presentation was superb. It was a real thrill for the '26 group at the Alumni Banquet to give Jim an M.I.T. cheer led by Joe Levis. The turnout of 22 of our classmates at Alumni Day was exceptionally good when one considers that it followed so closely on the heels of the convocation. Those attending were: Eben Haskell, Ray Freeman, Walter Campbell, Pop Constantine, Larry Cumming, Don Cunningham, Bob Dawes, Bob Dean, Esther Frutkoff, Tony Gabrenas, Bill Graves, Tom Green, Jim Killian, Joe Levis, Stewart Perry, Marvin Pickett, Win Russell, George Wardner, Abe White, Bud Wilbur and Leon Task. You will note the name of an alumna, Esther Frutkoff, among the group. Esther really backed me into a corner and gave me a little talking to about the nice notices she gets from the Class of '26 which always have a postscript mentioning that the affair, of course, will be stag. Dorothy Quiggle recently gave me a little needling about the same thing.

I have always been impressed by the unusual professions that M.I.T. men get into, and I hope from time to time to report on them for our Class. One of the most unusual is the priesthood. Yes, in the Class of '26 we have Father Arthur J. Riley of St. Peter's Rectory in Plymouth, Mass. I have not as yet had the pleasure of meeting Father Riley, but he has always taken a great interest in the Class, so I recently wrote to him to learn about his career. He writes that while he was attending Boston College he found that he had a flair for science and started taking summer courses at the Institute in chemistry. He ended up by taking up so many scientific and engineering courses that he certainly would qualify as a well-trained engineer; and, as a matter of fact, had originally planned to major in chemical engineering at the Institute and join the

Jesuits to teach. He did complete everything for an M.S. degree except a thesis on synthetic gasoline, but illness radically changed his plans, with the result that he entered the seminary which prepared him for parish work which has now become his profession. Father Riley still maintains his scientific interests and hopes in the future to be able to devote some time to them. It has been interesting to communicate with Father Riley, and we hope to hear from him often. Since learning that we have a priest in the Class, we have also noted that the records show that Robert McLachlan is the Congregational minister in Ellsworth, Maine.

We recently had a telephone call from Pop Constantine who was at the Chelsea Naval Hospital for a shoulder operation. The operation had been successfully completed and Pop was recuperating when he telephoned. We hope that by now he is as good as new. Pop is located in Springfield, Mass., and reports that Bill Freeman (who grew red whiskers at the Machias, Maine, camp) has been made engineer of plant and buildings for the Massachusetts Mutual Life Insurance Company at Springfield. He has been with the company since 1937. Joe Bates, according to Pop, is living in Northampton and has recently written a book on fishing.

A clipping from the Portland, Maine, *Telegram* announces the engagement of Dick Frost to Dorcas Paul. Dick is with Stone and Webster in Boston. From the Clinton, Mass., *Item* we learn that Art Brockelman's name will be included in the new issue of *Who's Who in New England*. Art is board chairman of Brockelman Brothers, Inc., a large independent food chain. Your Secretary knows Art to be a good executive from way back, for we wrote our thesis together — that is your Secretary wrote the thesis, and Art found a girl to type it for us.

In the last issue of class notes we promised an announcement about our 25th reunion — here it is. Al Dolben has agreed to become chairman! Since this is our most important reunion, we are very happy that Al has agreed to run it, for his experience and drive assure us of success. Al, as most of you know, is a partner in William H. Dolben and Sons, real estate brokers, with offices at 161 Devonshire Street in Boston. Currently, Al is serving as president of the Massachusetts Real Estate Association and has been extremely busy running all over the state making speeches and attending meetings. Al will shortly pick his committee and start organizing for our 25th, so you can look for more information soon.

Once again, please drop us a card or letter with a bit of news that we can include in the '26 notes. — GEORGE WARREN SMITH, *General Secretary*, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston 10, Mass.

• 1927 •

We reported in 1946 that Charles A. Bartlett had been appointed a judge in Portland. He now can be heard over Portland, Maine, radio station WCSH each Friday at 7:45 P.M. in a program entitled, "Within the Law." The Anglo-American

Oil Company in reporting staff changes has announced that Howard W. Page, executive assistant to the president of Standard Oil Company of New Jersey has been appointed a director of Anglo-American Oil Company.

The New York Herald *Tribune* ran a feature article in July about Gjon (pronounced John) Mili. It is here quoted in part: "Mili, the agile Albanian has been in Paris photographing the Foreign Ministers and some of the town's more spectacular saloons for *Time-Life*. The Statesmen will be part of a long-range Mili project to record the political world since the San Francisco Conference where he was State Department photographer and the only one allowed in the secret sessions. 'Also, I'd like to photograph Europe as-a whole, as I see it — re-create the mood of Europe today in a photographic essay.' If this sounds a little ambitious, no one who knows Mili will doubt that he can do it well. A long, wiry man with a beaky nose and a bushy iron-gray crew cut, he was born in Korce, Albania, on November 28, 1904, subsequently moving to Bucharest, and then to the United States where he went to MIT, produced several monographs on the mechanics of light, and worked ten years as a research engineer for Westinghouse. 'I am a craftsman,' says Mili. 'An Artist is essentially a craftsman.'"

Chungsoo Oh is a director of the Department of Commerce for the United States Military Government in Korea with headquarters in Seoul. — The following letter from George C. Popps brings us up to date on his activities: "While in Service I was employed by the Bureau of Reclamation and I was supervising the structural steel design sections of the South Platte River district. Being an Easterner I requested my transfer to Washington at the commissioner's assistant engineer's office where I was assigned to the special assignment division which deals with Mr. Truman's Point Four program, and which means interchanging technical and professional engineers with foreign countries. This new organization will be developed just as soon as Point Four becomes a law. Three years ago I married a girl from Milwaukee (a high school teacher) and about 20 months ago I became the father of a good-looking boy."

Royal Weller describes his whereabouts in an interesting letter quoted below: "I have been detached as chief of the engineering department of the Naval Ordnance Laboratory, White Oak, Md., to assume the duties of chief scientist, Naval Air Missile Test Center, Point Mugu, Calif. The latter is a new position, established under Public Law 313, which provides for 15 civilian positions in each of the Armed Services which are not subject to the salary restrictions normally imposed on Civil Service employees. Point Mugu is one of the most progressive and stimulating technical establishments in the Navy. It reports to the Bureau of Aeronautics and is charged with the responsibility of providing facilities and instrumentation for testing and evaluating the wide variety of guided missiles and pilotless aircraft under development by the Services."

Eugene Herzog has been elected a fellow of the American Institute of Electrical Engineers, and elected chairman of the Dayton section of the same organization. "He delivered a paper 'Resonant Grounding of Distribution Systems' before the Midwest Power Conference, Chicago, Ill., in April, 1949. This paper is being reprinted by the Line Material Co. of Milwaukee, Wis., in their house organ for distribution to their customers." — Aviation Week of July 6 pointed out that the Goodyear Aircraft Corporation has analyzed the Berlin airlift in terms of hypothetical modern dirigibles and gives us an idea as to what is occupying Tom Knowles' time, as follows: "The Goodyear analysis prepared by T. A. Knowles, vice-president and general manager, points out that the short range of the airlift is not the type of operation on which the airship can do its most efficient work. In the case of the airlift, however, Knowles estimates that the 18 dirigibles could carry required tonnage, in 1080 trips a month, using 600 crewmen, with 10,800 flying hr. and 2,970,000 gal. gasoline. This compares with 60 C-74's which would make 5400 trips a month to carry the same tonnage in 14,330 flying hr. using 8,725,000 gal. gasoline."

One of many of our classmates who has lived abroad for many years is Robert L. Petersen. His letter follows: "Well, that note in your letter isn't exactly true, for I've been here in Puerto Rico for more than five years. I married a local girl here in 1947 and bought a home last year, so I guess I'm here for a long stay. I did a great deal of kicking around before I got settled here. The first two years after graduation aren't worth mentioning. In 1929 I tried to get started in the radio game, but got dumped out in 1930 due to the depression. Having two invalid parents to support, I spent the next nine years with the power company in New York before I got up my nerve to make another break. In 1939 I went into television with R.C.A., but that also ended after two years when the radio industry swung into military production schedules preceding the War. At the beginning of the War, I wangled a civilian electronic assignment in Puerto Rico with the Navy, but after only a few months I was transferred to Trinidad, where we built three radio stations and did about everything else there is in the line of installation, operation and maintenance of Navy electronics gear. After a year and a half at Trinidad, I wound up again in San Juan and helped build two more radio stations. By the end of 1947 I got tired of being hog-tied to a desk, so I resigned and went into a local radio consulting business. Since then I have been chief engineer of a local broadcast station. That sums up my professional history. As for the Institute, my contacts have been extremely limited. In fact, the recent complimentary copy of *The Review* was the first I've seen in about 10 years. I've had so many different addresses in the last 10 years that correspondence has been a problem, anyway. However, I think this address will be permanent, and I would enjoy hearing from anybody who might still remember me."

Still another classmate working abroad, C. H. Kingsbury, reports as follows: "I

have been in Guatemala and Honduras for the past 14 years, with my present employer, Pan American Airways, and the Compania de Guatemala. My recent move was to return to Rosario after seven years away. At the present time, I am mine superintendent for the New York and Honduras Rosario Mining Company. We employ approximately 800 men in the mine and produce about 550 tons of ore for the mill per day. The company ships an average of 250,000 ounces of silver per month. My wife and two sons are here with me." — Volney Finch, who is professor of Mechanical Engineering at Stanford University, has recently written a book entitled, *Jet Propulsion — Turbo-jets* which has been very well received in aircraft engine manufacturing circles, as providing a much needed link between the voluminous layman's literature on the subject and the vast amount of advanced and complex theory of the practicing engineer.

Gordon E. Thomas describes his recent activities in this letter: "I moved to College Park Apartments, Camp Hill, Pa., in March to take the position of assistant chief of the division of dams, Department of Forests and Waters, Commonwealth of Pennsylvania at Harrisburg, Pa. When I left the Army in 1946, I went back with the Tennessee Valley Authority as materials engineer on the construction of the Watauga and South Holston Dams in East Tennessee. In 1941, the Army called me and for a year I served as a captain of engineers with the First Engineer Battalion, First Infantry Division. In 1942 I was ordered to the Office, Chief of Engineers, Washington, D.C., where I ended up in June, 1946, as executive officer, Plans and Training division and a lieutenant colonel. Went with T.V.A. in 1936 on exploration for damsites in the Lower Tennessee Valley around Paducah, Ky. Was associate materials engineer in charge of soil testing and inspection at Kentucky Dam when I left. Since graduation, until T.V.A., I was with the Massachusetts Metropolitan District Water Supply Commission on tunnel and dam construction."

You can bring yourselves up to date on Walter K. Johnson, 816 South Florida Street, Columbia Heights, Arlington, Va., with the following information which he has supplied: "My recent change of address does not involve a change of jobs and I am still doing the same kind of work, structural engineering, which I was doing in Richmond. I am still with the Veterans Administration and the change was due to a change of administrative policy in which a number of formerly decentralized services were centralized. At present we are engaged in getting out plans for newly authorized Veterans Administration, 500-bed hospitals. Due to the urgency of getting the new hospitals under construction as quickly as possible, plans have been standardized as far as feasible."

The Boston *Globe* has said it so we ought to be able to say it without blushing. A recent headline said, "Irrigation making Cape Man Rich" and the man they refer to is Bill Richards who is still very much running his numerous drought-proof gardens at Sandwich on Cape Cod. An article in *Time* on the same subject gives

further details: "At the Indianapolis speedway 18 years ago, husky, young William Richards drove his racing car over the side of the track, smashed up, and was carried away with a broken pelvis. 'When you're hurt and broke,' Richards later related, 'you naturally come home.' Back he went to his native New England, looking for something less dangerous. Said Richards: 'I stumbled into farming.' Last week, it looked as if Bill Richards, now 41, had stumbled into a gold mine. On Cape Cod, where he farms 300 once-scrubby, sand-swept acres by intensive irrigation, neighbors call him 'the broccoli king.' This summer, barring a hurricane, he will harvest close to \$200,000 worth of broccoli and lettuce from a farm which, by Texas standards, is hardly more than a pea patch. He will probably gross as much again from the sale of irrigation pipes and pumps to farmers who want to adopt his system."

"Did you ever have difficulty with Trigonometry in College?" The above is from the *Hartford Times* and tells its own story: "A professor in mathematics at Connecticut University has made the trigonometry class a little simpler for the novice. Students in Dr. William F. Cheney's class are no longer confronted with a mass of functions — the cosine, sine, tangent, and secant — to learn on the first day. Under Dr. Cheney's new approach all the student needs to consider is the function of the cosine."

The announcement of Joseph W. Hammond's engagement to Mary Jane Marston of Skowhegan, Maine, appeared in Maine newspapers last spring. At that time Joe lived at 46 Hilltop Road, Weston 1, Mass. Anson Rosenthal has gone to work for Century-Banner Engraving Company, Inc., 237 Lafayette Street, New York City. Herbert G. Johnson has been appointed manager of the heat transfer department of the C. H. Wheeler Manufacturing Company, Philadelphia, Pa.

George W. Brady (see class notes, May, 1949) has been appointed director of engineering of the propeller division of Curtiss-Wright, which brings under his supervision the engineering development of the new rocket power plants as well as propellers. George is also a member of the advisory committee of the New York section of the Institute of the Aeronautical Sciences. Fritz Glantzberg is at the Chatham Air Force Base, Savannah, Ga., and is looking for some of his old friends. — We regret to record the death of Walter B. Griffin of Brighton, Mass., and of Andres B. Borromeo of Quezon City, P.I.

Your correspondent is leaving for England shortly, but will back in time for next month's notes. — JOSEPH S. HARRIS, General Secretary, Shell Oil Company, Inc., 50 West 50th Street, New York, N.Y.

• 1928 •

Gerry Patrick has just been appointed eastern sales manager of Industrial Products for the Pesco Products division of Borg-Warner Corporation. Congratulations, Gerry, and we wish you a great deal of luck in your new job. — Congratulations are also due Dick Davidson because we have just received an announcement stat-

ing that the directors of the Boston Insurance Company and the Old Colony Insurance Company have elected Richard T. Davidson, head of the investment department of the two companies, as their new assistant secretary. Dick is a member of the Boston Security Analysts Society and the New York Society of Security Analysts. — Here is an interesting news article about Walter Hildick which appeared in the *New York Journal of Commerce*: "Walter E. Hildick, who joined the staff of Arlington Mills division of William Whitman Co. here last month as a new assistant agent, has responsibilities that include the general supervision of the mechanical, service, research engineering and industrial engineering departments."

The M.I.T. Club of Western Pennsylvania has elected George Hoffman president for the ensuing year. Leon P. Gaucher is now a chemical engineer with the Texaco Refining Company of New York. His son, Donald, entered M.I.T. in the fall on a scholarship. We are very pleased to announce the election of Elisha Gray as president of the Nineteen Hundred Corporation of St. Joseph, Mich., manufacturers of Whirlpool and Kenmore home laundry equipment. The company now employs approximately 2,000 persons in St. Joseph and Benton Harbor, Mich. Bud joined the firm in 1938. For the past 11 years he has acquired extensive experience in the company's production, sales and engineering problems. Before becoming president he served as assistant to the president and later as executive vice-president. Sales of the Nineteen Hundred Corporation last year were above \$42,000,000, an increase of approximately \$18,500,000 over 1947. This fall the Nineteen Hundred Corporation will open an additional plant in St. Joseph, built and equipped at a cost of \$2,800,000, to be devoted to the manufacture of its automatic washer and a new product, a clothes dryer. That is a wonderful record, Bud.

Even though the Class has been "out" over 20 years, we still find that Cupid is busy among our ranks. Dick Wengen is the latest. He married Mary Virginia Bixby earlier this year and the couple enjoyed their honeymoon in Bermuda. Dick is an engineer with the Fargo Manufacturing Company. The Wengens are making their home in Poughkeepsie, N.Y. — GEORGE I. CHATFIELD, *General Secretary*, 49 Eton Road, Larchmont, N.Y.

• 1930 •

At the Alumni Day dinner in June we were glad to see Bob Phelan and Jack Guinan from New York, Egerton Smith of Montreal, and three of the old faithfuls from Boston: Enoch Greene, Jack Latham, and Hermon Scott. In 1950, Alumni Day will be held on Monday, June 12, and our 20-year reunion will probably be scheduled for the week end immediately preceding, if suitable hotel arrangements can be made. Jack Bennett has appointed Hermon Scott to serve as chairman of the reunion committee. Jack Latham will handle the finances as treasurer. In a note to Bob Poisson, Spike Goble '31 has asked about reunion details, and expressed his intention to attend. He is with the Lea

Manufacturing Company of Waterbury, Conn. — Adolph C. Hugin of Washington, D.C., is now editor of the *American Patent Law Association Bulletin*. Recently he has written a book and several articles dealing with antitrust laws. Also from Washington comes word that a naval officer who received his master's degree with us is in charge of the Navy's weather service. We refer to Howard T. Orville, captain, U.S.N. John Sherman is returning to Procter and Gamble's main plant in Ivorydale, Ohio, after a number of years at the plant in Quincy, Mass. His home has been in Hingham and two of his three children were born while stationed in the east.

In June, Anthony Savina was married to Julia Margaret Jenner of Stamford, Conn., where he is a research engineer for the American Cyanamid Company. A fall wedding was planned for William Yelland and Martha Barnett of Chattanooga. Bill is an associate at the Harris Research Laboratories in Washington. — Ludwig Jandris of Gardner, Mass., has been appointed to the housing authority of that city, where he has his own contracting and building firm. Bob Reynolds is the new president of the New England chapter of the American Marketing Association. Bob is director of market research for Sutherland Abbot of Boston. Sig Linderoth is a professor at Iowa State College in Ames. Les Engler has been appointed dean of administration at the City College of New York. As professor of soil mechanics, Les has been in charge of the design and construction of the school's soil mechanics laboratory and since 1947 has been actively engaged in the purchase of technical equipment for the expansion program of the college. The Englers have three children and live in Tenafly, N.J. — Robert T. Armstrong is now with the Celanese Corporation of America in Narrows, Va. Bertil Ryberg is in the textile research division of Procter and Gamble.

We close these notes by reporting the death of Sanford A. Moss, Jr., in June after an illness of two years. He is survived by a wife and two children. In 1935 he was awarded the degree of doctor of science by Cambridge University, England. Since 1940 he had been head of the viscose laboratory of the American Viscose Company, Marcus Hook, Pa. — PARKER H. STARRATT, *General Secretary*, 1 Bradley Park Drive, Hingham, Mass. *Assistant Secretaries*: ROBERT M. NELSON, 2446 Iroquois Road, Wilmette, Ill.; ROBERT A. POISSON, 105 East 88th Street, New York 28, N.Y.

• 1931 •

Classmates known to have attended the Mid-Century Convocation last spring include: Randolph Binner, David V. Buchanan, Roy Chamberlain, H. P. Champlain, Walter Compertz, H. D. Gurney, A. L. Hesselschwerdt, Jr., J. N. Higgins, Edward Hubbard, Gordon D. Shellard, B. T. Stott and Edwin S. Worden, Jr.

We are glad to welcome back to this column our elusive Class President, H. P. Champlain, who has been hiding out on the West Coast for lo, these many years. Now, if we can only get him to that 20-year reunion, which isn't so very far away.

The Curtiss-Wright Propeller division

in Caldwell, N.J., recently announced the promotion of Francis R. O'Leary from factory manager to general manager. On his way to this important post, O'Leary received a master's degree in Course VI-A, graduated from the Harvard school of business administration, served a term as chief engineer and mechanical superintendent for Chase Brass and Copper, and before joining Curtiss-Wright, was plant manager for the Ansco division of the General Aniline and Film Corporation.

It may be some time yet before the good old steam locomotive disappears completely from our railroads, but the fact that its manufacture, for all except export trade, has all but ceased in this country seems good evidence that the iron horse of the future will consume oil instead of coal. Why this should be so was made pretty clear in a paper presented to last winter's New York meeting of the American Institute of Electrical Engineers by G. T. Bevan. His analysis and comparison of the operating and maintenance costs of steam versus diesel power for locomotives showed unmistakable advantages for the latter. Bevan is doing application engineering for the American Locomotive Company in Schenectady under a joint working arrangement between that company and his employer, General Electric.

Another '31 man to get into the limelight in New York last winter was John N. Dyer, supervisor of radar and air navigation research and development for the Airborne Instruments Laboratory in Mineola, N.Y. "For administrative and technical contributions to radio, including polar expedition communications and important wartime radio counter-measures," Dyer was given the Fellow Award of the Institute of Radio Engineers. Dyer was in charge of radio engineering for the Byrd Antarctic expedition from 1933 to 1935. He joined Columbia Broadcasting on his return and worked on their television development until 1942, when he became leader of the group developing very high frequency transmitters at the radio research laboratory of Harvard University. Early in 1944, Dyer became a director of the American-British Laboratory in England. After VE-Day, he was named head of the radio research laboratory's field division. He joined the Airborne Instruments Laboratory in 1945.

Sternly resisting all temptation to speak of his swank new position, we will terminate this scroll of '31 achievements by noting that Raymond W. Miller has been put in charge of industrial engineering for Swank, Inc., jewelry and leather manufacturers in Attleboro, Mass. He was formerly with the Murray Company of Boston and Hopkins-Roselund Associates.

If any other classmates have been distinguishing themselves, this column will be more than glad to have the facts brought to its attention. As it is now, "all we know is what we read in the papers."

— JOHN N. HIGGINS, *General Secretary*, 181 East 161st Street, New York, N.Y.

• 1934 •

Our 15th annual reunion was held at Saybrook, Conn., on June 9 and 10. The affair was a complete success and was

thoroughly enjoyed by everyone who attended. Credit for the success of the party certainly goes to the reunion committee. They did a first-rate job of planning and organization for several months in advance and handled the program at Saybrook with notable success. Mal Stevens acted as chairman of the committee with Hank Backenstoss as treasurer and Johnny Hrones handled the program. In addition, invaluable assistance was rendered by several more of our classmates on various phases of the work. Jim Eder acted as master of ceremonies at the banquet. Al D'Arcey handled the sports program. Art Esslinger contributed much time and effort on the publicity and Ed Nowell, Bob Roulston, Fred Vaughan and Phil Kron lent their assistance in rounding up candidates for the party.

The following is a list of those who attended: E. L. Asch, H. B. Backenstoss, W. G. Ball, Jr., C. F. Barrett, Jr., W. F. Baxter, Jr., Samuel Blake, J. G. Callan, Jr., J. J. M. Carey, Arthur Cary, G. K. Crosby, C. S. Dadakis, A. C. D'Arcey, Ernest DePaolo, Robert Ebenbach, J. P. Eder, A. C. Esslinger, G. E. Fickett, A. G. Fox, R. M. Franklin, S. S. Goldstein, Russell Hastings, Jr., J. A. Hrones, G. C. Hudson, E. J. Isbister, J. M. Kearney, T. O. J. Kresser, E. P. Kron, C. H. Lucke, W. R. Main, H. W. Mertens, Arthur Miller, F. R. Milliken, J. B. Minter, 2d, F. H. Moore, Jr., E. K. Murphy, J. L. Newbegin, J. R. Newell, J. M. Raymond, T. N. Rimbach, D. A. Robbins, A. J. Rogowski, A. E. Ross, R. K. Roulston, Leonard Shapiro, C. E. Sheehan, Edward Sieminski, M. J. Silberman, L. B. Stein, Jr., M. S. Stevens, C. T. Stewart, C. D. Sullivan, E. C. Taylor, H. E. Thayer, R. S. Thompson, F. W. Vaughan, John Westfall, R. H. Williams, W. A. Wilber, C. H. Wilson, W. H. Wood, G. P. Woodbury, and Walter Wrigley. Directly after the reunion, Mal Stevens jotted down his impressions while they were still fresh in his memory. His notes were so well put that we are printing them verbatim.

"Twenty-seven of us arrived at Ye Castle Inn during the afternoon and evening of Thursday, June 9. When those of us on the committee arrived at about 9 P.M., we found about 20 fellows sitting around a large fireplace swapping stories and getting reacquainted after many years apart. Al Rogowski was present but could not speak a word because of laryngitis. His sign language went over very well, and he managed to hold forth in a quiet whisper.

"Friday, June 10, started out a most beautiful, warm, sunny day, and the balance of the crowd (totalling 64) arrived during the morning and a few during the early afternoon. Ed Nowell, Chuck Kearney and about 10 others went fishing and caught a few shiners and miscellaneous dog fish and sand sharks. Al D'Arcey had the sports program well lined up so that quite a group went to play golf, while others went to play tennis. About one-half of the crowd stayed around the hotel and acted as official greeters for persons arriving on Friday. More classmates arrived during the morning than we had planned for, and the overflow were given rooms at the Riversea Inn, about a mile

and one-half from reunion headquarters. We did not have the pleasure of seeing Bob Becker, Jack Platt and Joe Bicknell, who were unable to make it at the last minute.

"Luncheon Friday noon was buffet style and the waiters were kept busy bringing in the food and taking out the empty plates. After luncheon, there was more getting acquainted activity, more golf and tennis, and starting at approximately three o'clock, a spirited softball game. Art Esslinger pitched for the 'Demons' and Walt Wrigley for the 'Dastards.' Several umpires were thrown out, but John Hrones stuck to umpiring the longest; he lasted three innings. The game got a little hectic on occasion, and Earl Murphy tripped coming into first and was then blocked on his way from first to second. He did a real neat flying act and landed on his neck and left shoulder. When he could finally get up, they gave him a base. Frank Milliken, Fred Barrett and Jack Carey could certainly slam the ball. Ted Rimbach did a good job of fanning out. The game ended after seven innings with the 'Demons' ahead 22 to 17. Fred Vaughan entertained the spectators by taking pictures with his Polaroid camera and passing the prints around a minute after the picture was taken.

"Dinner started at 7:30 P.M. To say the least, it was a noisy meal but a very pleasant one. The table holding Phil Kron, Bob Franklin and Charlie Lucke felt that singing was in order, so we had music with the meal. There was also an accordion accompanist to help keep the group in tune. Mal Stevens made a valiant attempt to get the crowd quiet enough so that he could tell them there would be no formal speeches or discussions during the evening. Mal then presented Jink Callan, who talked for twenty seconds saying that the precedent set in prior years for no speeches would be adhered to this time. Jim Eder, assisted by Ed Nowell, then started giving out prizes for the give-away game. Ed Nowell enthusiastically announced that there were several hundred dollars' worth of prizes to give away, and he was pretty nearly right. There was one prize for everyone, including a waffle iron, flat iron, shoes, books, fountain pens, pencils, sun glasses, portable stoves, paper towels, a case of Dreft, flashlight, Christmas cards, hunting knives, fish hooks, and a locomotive wheel (model). Names were drawn out of a hat for these items. Eight additional prizes were given to the following: The man with the least hair, Fred Vaughan; the man with the biggest waist, Charles Stewart; the youngest looking, Frank Moore; the man who had come the farthest, Gerry Hudson; the man whose appearance had changed the most, Johnny Westfall, the man with the most children, John Hrones, Ted Rimbach and Garry Hudson tied for this with four each.

"Following the give-away game, there was a storytelling contest but there was no conclusion as to who told the best one. This was a good part of the program and kept everyone happy until 10:30 P.M. Charley Sheehan then showed Phil Kron's movies that were taken at the 5th reunion. Classmates wanted to see them

twice, and it was even possible to recognize some of the fellows after 10 years. After the movies, bull sessions prevailed throughout the Inn until well past normal bedtime. The reunion broke up after breakfast on Saturday morning and a few fellows came back to Cambridge to attend the Alumni Day activities. Our Class had a place of honor on the floor of the Hotel Statler for the Alumni Day Banquet."

Fred Vaughan has just recently announced the birth of a son, Robert Faber Vaughan, born on March 30. Congratulations Fred. John F. Haines, who was formerly director of research of Aeroproducts division of General Motors Corporation, has now gone into private practice as a consulting mechanical engineer. He is specializing in production design. Bert Summers came east from California for Alumni Day. He was not able to make the reunion but we enjoyed talking to him at the banquet on Saturday night. Bert is in the firm of Erbenbraut and Summers, general contractors, at 696 Pennsylvania Avenue, San Francisco, Calif. He is doing considerable work for the University of California which now has a construction budget of over \$30,000,000. He became secretary of the M.I.T. Club of Northern California about ten years ago and still has the job.

Roy Fugal is director of personnel for the appliance and merchandising division of the General Electric Company in Bridgeport and recently addressed the Hartford Life Underwriters' Association at the group's first fall meeting at the Hotel Bond. His subject was "Sales Training in Industry." Arthur Leydon was married on October 31 to Mildred A. Grierson, daughter of Mrs. Grace Grierson of Waltham, Mass. Arthur is working as a research chemist with Dewey and Almy Chemical Company in Cambridge. Francis M. Buresh was recently granted a patent covering a manufacturing process for use in making nonwoven fabrics. The machine fills a need in the textile and plastics field for a method of making non-oriented fiber webs on a continuous basis. Pilot plants using the machine have been installed by two firms. William W. Ragland, a lieutenant colonel, has recently been appointed to work on harbor rehabilitation projects in the Visayas and in Mindanao. His wife, Frances, and 14-year-old son, Ned, have joined him overseas and are now living in Manila.

It is with deep regret that we announce the death of Frederic F. Hayley who died of a heart attack in San Diego, Calif., on December 14, 1948. Fred originally came from Memphis, Tenn., and had been living in California for the past few years. He leaves his wife, Mary, and three children, Cornelia, Berry and William. — JOHN G. CALLAN, JR., *General Secretary*, 184 Ames Street, Sharon, Mass. ROBERT C. BECKER, *Assistant Secretary*, Chile Exploration Company, Chuquicamata, Chile, S.A.

• 1935 •

Members of the Class had a fine time this past summer. In fact, so good a time that not one has yet had a minute to write to me about it. Late last spring, Ed Taub-

man sent me a birth announcement card from Baltimore. I did so good a job of saving it for these notes that I can't find it. Hank Ogorzaly has three youngsters now. The Ogorzaly's second daughter, Lisa, was born on April 24. The number of class bachelors decreased by at least one on June 12. On that date John Charles Nelson married Concorde Genevieve Belliveau in Everett. John is an architect in Boston and lives at 136 Cedar Street, Lexington. Larry Hall has been promoted to general agent for the New Hampshire Fire Insurance Company and is located in Manchester. About two years ago Earle Megathlin and several associates started a yacht hardware manufacturing concern, the Whaling City Marine Company, in New Bedford. Earle is president of the organization. The line now includes approximately 150 items. Earle worked for several years as an engineer for Westinghouse and was purchasing director for Cornell-Dubilier Electric Corporation in New Bedford before starting in business for himself.

Jack Colby, Bob Granberg, and Lou Packard have already started preparations for a reunion next year. First, attention is being directed to the preparation of mailing lists classified by course, fraternity, and geographical locality and the recruiting of classmates to assist the central reunion committee. Since my reference to a reunion in the May class notes, there has been a decided expression of opinion favoring a get-together near Cambridge at the time of Alumni Day instead of at Stockbridge in September. The committee is formulating plans along these lines. — J. BARTON CHAPMAN, *General Secretary*, 7 Lallely Boulevard, Fairfield, Conn.

• 1937 •

Either you fellows have settled down into a routine or you haven't yet recovered from a busy summer. We had a good time on July 9 when Gil Mott married Rosemary Fudge of Montour Falls, N.Y. They had a nice reception but, of course, we didn't have much time to see the harried groom. We passed the time away delightfully talking with Cliff Lytle and his wife and several other guests. The Motts have bought a new house at 92 Beers Street, Stratford, Conn.

We have word that Allen Hazeltine is currently with the patent department of the Philco Corporation in Philadelphia, having just passed his bar examinations. The Hazeltines have a baby girl and a boy, now six years old. Isabelle Wilson of Davidson, N.C., announced her engagement to H. Clay Lewis. He is an assistant professor of chemical engineering at Georgia Institute of Technology. — WINTHROP A. JOHNS, *General Secretary*, 34 Mali Drive, North Plainfield, N.J. WALTER T. BLAKE, *Assistant Secretary*, Research Products, Development Division, Pillsbury Mills, Inc., Minneapolis, Minn.

• 1938 •

This begins another year of class notes and thanks to our list of new assistant secretaries, we are getting off to a grand start. You read of these secretaries in the

open letter which was circulated to the Class in August and if you have any news, pass it along to one of them.

We have a wedding to report this month. Helen Kirkwood was married to George Bissett, Jr., in Cleveland on May 28. They are living in Warrenville Heights, Ohio. Congratulations, George. In our last letter, we referred to Arch Copeland's family of five, quoting from a letter from him. Arch has hastened to correct us saying that the five includes Jo-Ann and himself and that they have two boys and a girl. Also concerning the next generation, the following is taken from a letter by Dick Muther: "Just a line to tell you of the arrival of Richard Scurlock Muther. July 23 will be a famous date in the Muther household from now on." Young Dick is their second child; the first being a girl, Laura Louise.

We have word that Paul Tillson has become associated with Semmes, Keegin, Robinson and Semmes, a Washington, D.C., firm in the practice of law relating to patent changes. King Coombs is at the General Electric Erie design engineering office. He is in administrative work handling student engineers, engineering personnel and so forth. Ralph J. Slutz, formerly with the Institute for Advanced Study, has joined the electronics division of the National Bureau of Standards where he will be concerned with basic research, design and development of electronic computers. His work will include standards for electronic computers, simulators, analyzers and special electromechanical devices as well as the development of components, circuits and design for such equipment. Ralph has done extensive research in electronics, electronic computers, elasticity, and terminal ballistics. His work in ballistics has dealt particularly with the reaction of structural members to impact loads, protection against bombing and impact and explosion data for the national defense research committee. — Miles C. Leverett, former director of the technical division of the Clinton Laboratories, has been appointed technical director of the NEPA project of Fairchild Engine and Airplane Corporation at Oak Ridge, Tenn. Miles will direct the technical program for development of nuclear energy for the propulsion of aircraft under Fairchild's contract with the United States Air Force.

Forrest Judkins is staff assistant to the manager of engineering at the General Electric Works in Pittsfield. Forrest was appointed chairman of the county blood donor service of the Berkshire, Mass., county chapter of the American Red Cross. Russ Coile is with the Division of Industrial Cooperation at the Institute and is normally stationed in Washington with the Operations Valuation group of the Chief of Naval Operations. He is back at the Institute for two terms of graduate work in Electrical Engineering. Russ, his wife and three boys; ages, six, four and one-half, and two years, are living in a large apartment in Brookline. — Vern Lippitt is back from his Rhodes Scholarship with a degree in Economics and is now with the General Electric Company in Schenectady doing market research. Vern and his wife have a baby girl born in August.

Bill Whitmore is also in Schenectady at the General Electric Operations Valuation group. Bill and his wife recently became the parents of a boy, Charles. Jon Roehrig, who is back at the Submarine Signal division of Raytheon as design engineer after a two-year term as president of an awning company in Boston, has two girls, seven and five years old, and one boy a year old.

Bill Roper is at Fort Leavenworth, Kansas, for a two-months' tour of duty at the Command and General Staff College. Freddy Schmitt, X-B, is director of purchasing at Merck and Company and lives in Westfield, N.J. He has on his hands a project of landscaping his two- or three-acre lot with a power garden tractor, bulldozer and other attachments. Before closing the notes for this month, we would like to mention two of our class authors. Dick Muther wrote *Production Line Technique* which was published in 1944 and Frank Atwater was the coauthor of *Production Control*, 1942, and *Industrial Organization and Management*, 1945. — ALBERT O. WILSON, *General Secretary*, 32 Bertwell Road, Lexington 73, Mass. RICHARD MUTHER, *Assistant Secretary*, Methods Engraving Council, 822 Wood Street, Pittsburgh 21, Pa.

• 1939 •

The 10th reunion now being History, capital H intended, we will try to recount the events over that week end. First of all, the reunion was as complete a social success as it was a financial failure; but not so serious as to be quite in the red, thanks again to Hal Seykota's Sophomore Prom. More about this later.

The advanced guard arrived on Friday in the persons of Doc Wingard, Mike Herasimchuk, Mel Falkof, Wiley Corl, Dick Cella (plus Putt-putt), Hal Seykota, Bus Emerson, Bob Wooster, Dave Bartlett, Gordon Pope and Stu Paige. Eight of the aforementioned 11 closed the Mayflower Hotel Sunday in much the same style as it was opened on Friday. Many others arrived Friday evening; among them were Bill and Lucille Brewster, Bill and Aide Pulver, and George Senior and his wife.

Saturday breakfast proved to be a festive occasion, attended by a few of the Friday night guests, plus the following: Mort Metzger, George Mitchell, Fred Grant, Bob Schmucker and John Stewart, not a classmate but a welcome friend accompanying Bob. The reunion committee meeting after breakfast resulted in Mike Herasimchuk's turning in a splendid record of meal attendance for lunch and dinner; credit also goes to George Mitchell and Fred Grant as the junior F.B.I. name tag committee, and Wiley Corl as constitution committee of which the "one copy in existence" is now in Fairfield. Al Grafeo did a fine job of arranging a sports program. Dave Bartlett also turned in a splendid performance as chairman of the nominating committee; the assistance is appreciated. George Beesley and Mike Herasimchuk were unanimously elected as assistant secretaries and news to them will also be appreciated.

Seventy-eight was the total number

present at the Saturday luncheon. New arrivals included: Bob Thompson, George Estes, Ryder and Betty Pratt, Fred and Eugenie Cooke, Ozzie and Mrs. Stewart, Shorty and Mrs. Merriman, Henry and Mrs. Littlejohn, Don Waterman, Rocky Roberts, George Beesley, Nick Carr, Byron Hunicke, Martin and Mrs. Linderberg, Bill Phillips, Ernie and Mrs. Kaswell, Man-nie and Mrs. Morrill, Joe and Mrs. Mazur, Charlie and Mrs. Friedman, Durb Woolford, Seymour Sheinkopf, Frank Spooner, Win Steele, Jim Smith, Dave Frankel, Bob Touzalin, Will Jamison, Herb Jaffee, Al Rugo, Al Schreiber, Irv and Mrs. Cohen, Burt and Mrs. Rudnick, Burns Magruder, Pete Hunsaker, Joe Dana, Wilson and Mrs. Keene, Chuck Mercer, Clint Lawry, Ben Howes and his wife, Joe and Mrs. Zallen, Ralph Woollett, Jack Krey and Bob and Sibyl Saunders.

A group picture was taken following the luncheon. The beach was thoroughly enjoyed but, apparently, the reminiscing was enjoyed even more. Dick Cella entertained magnificently on the seashore with tales of the recent safari to Nairobi and is one of the few citizens, it is believed, to have shot an oryx.

The banquet was equally successful; except, of course, for the guarantee. Many more of the brethren were on deck in the persons of: Charlie Hobson, Dick and Mrs. Martin, Hal Chestnut, Larry and Mrs. Perkins, Louis Castleman, Leonard and Mrs. Luchner, Smitty Curtis, Dud Campbell, Jim and Pat Laubach, Sam Sensiper, Chet Ross, Hank Kettendorf, Myron and Mrs. Norman, Don and Mrs. Timbie, and Mrs. Hunicke.

The amphitheatre program was enjoyed by all; Dave Bartlett being the evening's sensation, and Bob Casselman winding up just another hard afternoon's work by doing a really fine job of mastering said ceremonies. Bob deserves even more than that brief word for all his interesting and informative entertainment. Those cameras may now be purchased locally.

One medal is left over for the person, undiscovered as yet, who fathered the party-on-the-beach idea, but most of the bronze therein belongs to Bill Brewster who made all the arrangements so nicely.

Perhaps the above record is incomplete; if so, our apologies and your additions will be gratefully received. Many classmates were regrettably unable to attend the reunion. Telegrams were received from Morrie Nicholson and Paul Stanton. Letters were received from Karl Lenk, Ed Skralakis and a great many others. The following statistics may be incomplete but of general interest: The largest family consists of three children, and there were many ties. Frank Spooner, however, is our only known member with twins. The most highly decorated classmate in World War II is Gordon Pope. The ones who traveled the greatest distance to the reunion were Hal Seykota from Rio and Bus Emerson from Dallas. — STUART PAIGE, *General Secretary*, 701 Mill Plain Road, Fairfield, Conn.

• 1942 •

It is our sad duty this month to report the death of Peter Sibley on August 20 in Wrentham. Pete had been employed as

a flight engineer for Pan American at the General Electric Company plant in Schenectady until about a year ago when he came back to New England to work for the Foxboro Company. It seems appropriate, on behalf of the members of the Class who knew Pete well, to express here their sympathy to his wife, the former Dorothy Farrar, and to their young sons, David and Peter Lawrence, Jr.

Ted Eliot writes from Tulsa where he has become sufficiently established to have presented a paper at an American Institute of Chemical Engineers' meeting on "Chemicals From Hydrocarbon Synthesis." He says that one of the Twaddles is in Oklahoma (which one, Joe?) and has a National One Design Class sloop on a lake at Tulsa. We understand that Marvin Stein, who has acquired a wife and two children, is at Pennsylvania State College studying physics; and that Harold Ring, having just received a Ph.D. degree in Physics, has joined the Du Pont technical staff at the Wilmington Experimental Station. Berwick Academy at Berwick, Me., has appointed Wallace Murray to be the new headmaster. Mr. Murray served in Africa and Europe during the War, and more recently, has been assistant principal and head of the mathematics department of the Bolles School in Jacksonville, Fla. He has also found time to obtain a master of education degree from Boston University, awarded this summer.

Rumors from New York indicate that Al Mall is working for the Koppers Company, and that Adrian Marcuse is selling air conditioning equipment for the Sturtevant Company. Rod Flinchbaugh has two children, Dickie and Marjorie; he is working in production for Polaroid. Robert Vyverberg took the vows this June in Rochester, N.Y., with the former Margaret Katherine Doty.

The Alumni Day Banquet was attended by a gay group from '42, two full tables and Carl Zeitz off among some strangers. Jack Madwed discovered that he had never seen Adelaide Toombs'47 when they were classmates. Pete Volanakis is still bigger than life and just as prosperous looking; he gave me a ride home afterward in his new Buick. The attendance as registered on my program was: John Arnold, Frank Staszkesy, Maurice Janson, Lou Rosenblum, Bernie Levere, Alfred Goldis'46, Marty Levene, Dave Nicholson, Sampson Grunes, Leon Freeman, Bob Kraus, John Mulvaney, Alan B. Macnee, and Harvey Kram. — GEORGE M. KAVANAGH, *Acting Secretary*, Room 4-055, M.I.T. Cambridge 39, Mass.

• 1943 •

Our representation at Alumni Day in June was small. But from all indications, what it lacked in numbers it made up with spirit. In our contingent were Nathan Acker, Bert Picot'44, Jim Hoey, Charlie Crocker, Stan Paterson, Art Vershbow, Bernard Liss, Bob Rorschach, Hans Walz, and Ken Warden. However even if you did miss eating with these stalwarts on June 11, you can join many of them at a recently formed informal 1943 luncheon group which meets in the reception room outside the Campus Room in the Gradu-

ate House at 12:15 P.M. on the first Thursday of each month. The regular members of this group include Fred Perry, Chris Matthew, Ken Warden, Bob Hewes, Rus Bowen'47, Charlie Crocker, Ken Wadleigh, Roland Grandgent'47, George Feick, and Hans Walz.

Ben Halpern received his Ph.D. degree in chemistry from the University of Notre Dame last June. He had been studying there for approximately three years prior to graduation. Another man whose accomplishments are worthy of note is Habibur Rahman, the architect of the Gandhi Ghat at Barrackpore in Bengal. This structure, which serves utilitarian purpose by being a landing place on the Hooghly River at Barrackpore and a flight of steps down which bathers can reach the river, is primarily a memorial to Mahatma Gandhi.

The former Irene M. Banks and William J. Cain were married in Norwich, Conn., on May 7, to which city they returned after an automobile trip. Bill is with the American Thermos Bottle Company. The Church of the Latter Day Saints in Highland Park, Mich., was the scene on May 16 for the marriage of Dorothy Mae Hollyoak and John M. Watts, lieutenant, U.S.N. The bride is a graduate of the Henry Ford Hospital School of Nursing and Hygiene and was assistant head nurse at the Ford Hospital. Her husband returned to the States in June, 1947, after two years as a docking officer on Guam. He is now a senior superintendent on construction at the New York Navy Yard.

The former Helen Chaffin, whose home is in Brookline, Mass., and Robert I. Mason were married at the Hempton Court Hotel in Brookline on May 29. Helen is a graduate of the Rhode Island School of Design. The Masons spent their honeymoon in Miami and Cuba, and returned to Springfield, Mass., where they are at home at 61 Long Hill Street. From the other side of the country I have heard that James W. Leader and Jeanne Budd were married in Seattle on July 19. The Leaders will live in Whittier, Calif. More than a month later, on August 27 to be exact, the former Helen Dyer Goodwin and Henry W. Fritts, Jr., were married in the First Congregational Church in Pittsfield, Mass. Fritts' bride is a graduate of Duke University and is secretary of the Harvard Law School Alumni. The groom is doing double duty by being both an instructor at Northeastern University and a student at the Boston University School of Medicine. The couple are living in Cambridge.

In reporting the following six engagements, I feel sure that most of the persons involved are already married as the first was announced last May 4. Judith Hechelman's parents announced her engagement to Melvin Lax that day. The future bride's home is in Brooklyn. She graduated from Brooklyn College and then qualified for a master's degree from the University of Wisconsin. She is teaching Romance languages at the University of Syracuse where, strange as it may seem, Melvin is an assistant professor of physics. About three weeks later, on May 24, the engagement of Elizabeth Jane Guest and

Robert C. Fettes was announced. Miss Guest's home is in Pennsylvania. Bob is currently carrying on a research program at Princeton University. From Lexington, Mass., I have heard that Dianne Harriman Winston and Benjamin B. Crocker were to be married in a late summer wedding. The bride, who is a Wellesley graduate with an advanced degree from Brown University, has been a student at Boston University School of Medicine. Crocker is at the Institute working on a research problem. Syracuse University pops up again because it is Katherine Sally Sparfield's alma mater. Her engagement to William M. Laird, was announced early in August by her parents in Jamestown, N.Y. Bill earned his master's degree from the Carnegie Institute of Technology last June, and is now assigned at the Pawtuxent Air Base in Virginia. A few days later, from Bound Brook, N.J., Elizabeth Merrill's family announced her engagement to Robert W. Hull. Both are working at the Bell Telephone Laboratory in Murray Hill. Miss Merrill is a graduate of Elmyra College, and her future husband graduated from New York University and later from Technology with a Ph.D. degree. — CLINTON C. KEMP, *General Secretary*, 29 Verlynn Avenue, Hamilton, Ohio.

• 1944 (2-44) •

The Class had a fine turnout for its 5th reunion last June. Sten Hammarstrom acted as master of ceremonies and did a very fine job. He came all the way from Detroit for the occasion. We celebrated at the Campus Room of the Graduate House on Friday with a Stag dinner and after-dinner party. On Saturday the Class had a suite of rooms at the Statler Hotel where we gathered before the Alumni Banquet. Wives and guests were present for the meeting.

Trigg Noyes wrote a letter to me from San Jose, Calif., stating that distance was the only reason he did not make the reunion. Trigg, after graduation in 1946, went to work with a small manufacturing outfit in North Carolina. In June of 1948, the company went out of business and Trigg headed for California where he is with the Food Machinery and Chemical Corporation working in their central engineering department. He is having a wonderful time designing gismoes to replace human labor in the food processing and packing field. Trigg is still holding out as a bachelor. — Bob Faurot is studying in Switzerland and expects to be back this fall. — Ed Roos'47 writes that he has been keeping contact with several of the boys in New York. Duke Kahl is tied up with the Merrimac Paper Company in technical sales. Tom Carmody is with Carbide and Carbon as technical representative on new construction. Ed, however, is in the real estate game after a year's tour with Esso at their Baltimore refinery.

Several M.I.T. men are in Linden, N.J., working for Esso in various divisions. To mention a few: Joe Shrier, Bill Redlien 6-46, Bob Meny, Brooke Pietsch'47, Bob Thiede and Lee Hanower'47. Felix Palubinskas has been appointed to the

staff of the Naval Ordnance Laboratory at White Oak, Md. Prior to this appointment, Felix was a physics instructor at Iowa State College. Austin Dodge decided to gain further knowledge as he has just received his bachelor of laws degree from George Washington University in Washington, D.C. Bruce Kingsbury has been appointed to the faculty of Milton Academy. He will teach mathematics and physics. Last summer Bruce was camp director of the Essex County Young Men's Christian Association day camp located at Princemere, Mass.

Several engagements and weddings have taken place over the past few months. John Gardner is engaged to Dorothy Dietrich of Ithaca who graduated from Cornell. Joe Crowley has married Marcia Sickels of Brookline. Fred DeBell has married Barbara Coulson of Springfield, Mass. Fred is now with DeBell and Richardson, Inc., of Hazardville, Conn. Warren Bishop is now married to Diana Holt. They will make their home in Rochester. Bob Nicolait is married to Joyce MacClintock of Rockville Center, N.Y. Richard Livermore married Rose Naves of Ipswich last June. Dick is now with the Naumkeag Steam Cotton Company in Salem. Bob Smith, who is chief observer of the Mount Washington Observatory at Gorham, N.H., has married Mabel Barnes of Brooklyn. Walter Turner'47 married Dorothy Ullman of Arlington, N.J., in August.

Douglas Anger was among seven men named to the Harvard University Society of Fellows. He will get free study and research facilities at Harvard for the next three years.

Yours truly has left the hall of Harvard Business School and I now find myself in Dallas, Texas, where I am a general flunky for the Alford Refrigerated Warehouses in an effort to learn the warehousing game. Since my arrival I have run across Bev Tucker and his wife Marjorie. They seem to enjoy this invigorating Texas air. I have also seen Jack Freiburger, who is running the Steers Laundry in Dallas. Last week Courtney Reeves visited Dallas. Court is working in the sales department of the Southwestern Paper Company of Houston. — WILLIAM B. SCOTT, *General Secretary*, 3916 Potomac, Dallas, Texas. MALCOLM G. KISPERT, *Assistant Secretary*, Room 3-208, M.I.T., Cambridge, Mass.

• 1946 (2-46) •

There will come a time when the passing of spring and summer will no longer bring forth engagement and marriage notes, and these pages will be content to herald family additions, Alumni Day festivities, and business and professional achievements. That time appears nowhere on the horizon, however, for the news we receive is rife with diamonds and orange blossoms. Recent engagements are those of Charles Silver and Lillian Stransky of Avondale; David D. Smith and Betty Ann Loomis of Larchmont, N.Y.; Bob Northup and Jacqueline O'Connor of Lexington, Mass.; Deane Folsom and Oris Darling of Hardwick, Vt., and Sarasota, Fla.; Lloyd Hoover and

Laura E. Munn of Springfield, Mass.; Jim Goldstein and Rosanne Green of South Orange, N.J., (Jim is an instructor in the School of Architecture at the Institute); Bill Schield and Charlotte Heifetz of Milwaukee, Sally Leuderking of Great Neck, L.I., and Gifford H. Stanton; Marion Newlin of Lansdowne, Ind., and Al Little; and Ann Decker of Pittsburgh and Bill Siebert planned a September wedding.

Many of the engagements reported in the past several months have been converted into marriage news, as our incoming mail testifies. Roger Sonnabend and Elsa Golub were married on July 17 at the Hotel Pierre in New York City. Rog was graduated from the Harvard Business School in June along with classmates John Wandrisco, Fred Fuller, Ed Hill, Frank Low, Frank Stevens, Keith Lanneau, 6-46, and Jim Craig; and he managed the Nautilus Hotel and Beach Club this summer. Don Robison and Margaret Ann Waters of New York City were married in St. Barnabas Church on February 5. Since the wedding, the Robisons have settled in Dallas, Texas, at 4001 Walker Street. At St. Mark's Methodist Church in Brookline, Harold Oakes and Elizabeth Kenrick of Brookline were married on April 2 with Merle Loken'48 as one of the ushers. Stan Young and Marilyn Pennington of Yonkers, N.Y., were married on May 14 in the Church of the Redeemer. Bob Taylor and Clare Cochran of Wallingford, Pa., were married in the Wallingford Presbyterian Church on July 2. Mildred Capodilupo and Ted Heuchling were married in Chestnut Hill, Mass., on August 28. Ted has his master's degree and is working in the Servomechanisms Laboratory at the Institute. Stu Edgerly was married to Jean Brown of Providence, R.I., at her parents' home in August. Hillman Dickinson was married to Nancy Cameron of Pittsburgh in the Cadet Chapel. Classmate Warren Chapman came east for the ceremony. Elsie Daansen and John R. Green were married in Rochester, N.Y., at the Asbury First Methodist Church on June 18. The wedding of David C. Sherrick and Helen Wichterman was announced in June, in Chicago. Mary A. Steven and George F. Tolson, Jr., were married in June in the Astoria Presbyterian Church in Long Island City, N.Y. Susan Wender of New Rochelle, N.Y., and Jerold Lowenstein had planned an August wedding, and Harry Santangelo was married to Lorraine Hall of Groton, Conn., at the Sacred Heart Church in Groton on August 10.

Bob White writes to say that he and his family are now living in Degolia, Pa., address, Box 63. Bob is an engineer for the Quaker State Oil Refining Corporation in Bradford. Bill Rapoport has joined the staff of the Stamford Research Laboratories of the American Cyanamid Company as a trainee after graduating from the Wharton Business School of the University of Pennsylvania. Robert Noce was graduated from West Point and was commissioned a second lieutenant in the armored cavalry. Robert Goodstein received the degree of master of science from Ohio State University in June. Cadet Karl F. Peterson was the honor graduate

at commencement at the Coast Guard Academy, and won five of a total of 17 academic awards offered his classmates. Dale Allberry has been elected as a teacher in the elementary school system at New Bedford, Mass. Marion G. Hogan is in an interesting vocation. She is the vice-president and manager of Weather Advisers, Inc., the company that advises industries influenced by weather conditions. Ernest R. Kretzmer of Worcester received his doctor's degree in science at the age of 24 in June. He has been on Technology's research staff and is a consultant to the Technology Instrument Company of Waltham. At a week end get-together on Long Island, which included Bill and Mary Jackson, Jim and Diane Craig, Roger and Elsa Sonnabend, and Bob Spoerl, Glen and Phil Dorflinger were accompanied by their new daughter, Amy Jill, born on May 25. — JAMES S. CRAIG, *General Secretary*, 387 Harvard Street, Cambridge 38, Mass.

• 1946 (6-46, 9-46) •

Class President Dave Black, VI, wishes to remind the Class that our five-year reunion is approaching and that it is not too early to begin to lay sketchy plans for 1951. He says that he will be most happy to entertain any forthcoming suggestions. Dave writes that he spent a summer vacation skiing at Mt. Tremblant, P.Q., Canada, and that both the skiing and the food were excellent. He adds that he and Ed Belcher, II, are going to become active in the New Haven County M.I.T. Club about this time of the year. Ed, also a skiing enthusiast, is presently employed by the Chase Brass and Copper Company of Waterbury, Conn. James Coffee, II, is now an instructor in Civil Engineering at the University of Massachusetts. He must be kept rather busy because he writes that he could not get off for even a short summer vacation.

Emerson Newton, IX-A, continues with Arthur D. Little, Inc., in Cambridge. When we asked the usual "down the aisle" question, he introduced to us, by card, his wife since 1940, the former Harriet Johnson and two daughters, eight and five years old. Edward Washken, XII, is in business for himself as a technical consultant. Just for the record, he persuaded Ruth Knapp to say "yes" in September, 1943. James Hutto, pre dental, is going through his Navy dental internship at St. Albans Naval Hospital, St. Albans, N.Y. Jim obtained his doctor of dental medicine degree at Harvard, previously taking pre dental at Technology in '46. Robert Ellis writes that he is a sales representative and travels continuously. In response to my query as to whether he is married or not, he laconically responded: "Celibate."

Donald Hurter, II, is now a sales engineer for the Turbine Equipment Company of New England. Don received his bachelor's degree at Technology in '46 and went on to get a master of engineering degree from Yale in 1947. He and Mrs. Hurter, the former Catherine Reilly, are still living in Norwood, Mass. Frank McCarthy, XIII, is now a technical copy writer at the Boston Gear Works, Quincy,

Mass. Frank has just this spring received a bachelor's degree in English at Tufts College and writes that he will probably have a little time for reunion planning. Cyrus Liberman, XIV, is a student now at Boston University and plans to obtain a master's degree in 1950. He obtained a bachelor of arts degree from Rollins College, Winter Park, Fla., in 1948, so perhaps he will be able to add the southern touch to reunion planning. Dave Herwitz, XV, received the degree of bachelor of laws from the Harvard Law School this past June, magna cum laude. He was treasurer of the *Harvard Law Review* and a former summer employee in the editorial office of the *Item*, the Lynn, Mass., newspaper.

Howard DuBois, XV, was recently appointed treasurer of the A. DuBois and Sons, Inc. Howard, the son of the president of the company, joined the firm in 1943 and has been in charge of production control. He studied industrial and textile engineering at Technology. Mrs. Richard French (Roberta Kolberg, IX-B) informed me at the beginning of the summer that her husband, Course IV-A, '49, and herself were building a modern three-bedroom house in Newton Center which they hoped to have completed for sale this September just past. We do hope that the contracting was successful and perhaps we can describe the next one you build before it is sold. Last March, Mrs. Emily Henley of Philadelphia announced her engagement to Charles Swet, XIII. Since then I have not heard what happened. Can some Philadelphia classmate enlighten us? Arthur Nisula, VI, obtained an S.B. degree in electrical engineering at Harvard in '29 before obtaining his S.M. degree at Technology. Arthur is in the design section of a Boston electrical engineering firm, is married and has two daughters, Ann and Mary.

Francis Giori, VI, went to Buffalo, N.Y., in September of 1946, and has been employed by the Bell Aircraft Corporation there. In May of 1948 he married Jane Ford of Buffalo. His address, for classmates who have asked, is 356 71st Street, Niagara Falls, N.Y. Joseph Cincotta, XVII, has been in field construction since leaving M.I.T. He is now working for the Rugo Construction Company. He married Marie Silvestro, a Radcliffe graduate, in June of 1947. Robert A. Summers, XVI, is a part-time graduate student and candidate for a doctorate at Technology. He is employed as a research assistant in the Department of Aeronautical Engineering, Instrument Laboratory. He wrote at the beginning of the summer that he had been doing research and development work on automatic control systems.

Robert Ritterhoff, XIII, was one of the V-12 men who almost combined diplomas and wedding bells when he married Vivian Jones of Baltimore on June 22, 1946. Mr. and Mrs. are now living in Philadelphia where Bob is employed in the engineering department of the American Engineering Company of Philadelphia. Bob is also a member of the M.I.T. Club of Philadelphia. Asked Bob last June if he had a family and he wrote back "No offsprings as yet." Keep us posted, Bob. Your Assistant Secretary has been

presented with another tax exemption, Margaret Clare, born in October.

Away back in February I was informed that Teresa LaCroix of Cambridge had announced her engagement to Robert Davis, XVIII. Bob obtained his S.B. and S.M. degrees from M.I.T. and is a member of the faculty there. Perhaps he can tell the Secretary, and thereby the rest of his Class, what happened thereafter. Rosemary McCrone of Cleveland, Ohio, was married on May 21 to Vincent Rethman, X, major, U.S.A.A.F., at our Lady of Angels Church in Cleveland. Vincent received his S.B. degree from the University of Kansas and his S.M. degree from M.I.T. He is a member of the Tau Beta Pi honorary society. Priscilla Lightbown of Quincy, Mass., was married on June 10 to Walter Milliken, X. Walter attended Technology prior to receiving his appointment to West Point from the late Senator David Walsh. Walter graduated from the Military Academy this June, having been appointed a cadet sergeant during his training. The couple took a wedding trip to Canada and the Thousand Islands and have spent the summer at Tyndall Field, Panama City, Fla.

Mary Sabine of Chevy Chase, Md., was wed on July 9 to Addison Schade, IV, at Chevy Chase. During the War Addison served first with the Corps of Engineers and then with the United States Army Air Force. He is now with the firm of Des Granges and Steffian, architects, in Boston. The couple took a wedding trip to the White Mountains in New Hampshire and have spent the summer in Essex. Summer reports indicated that they expected to live in Hingham, Mass. this fall.

Generoso Pope, IX-B, has been making a name for himself as a newspaper editor according to an article in a recent issue of the *Editor and Publisher*. This spring Generoso was a student at the New York University Law School. However, he found time to take over his father's Italian-language newspaper, the *Il Progresso*, and revitalize it. In April, 1949, advertising revenue was double what it had been in the previous April with no increase in rates. Readership surveys and market inventories, a color roto section, women's features, circulation drives, air editions to San Francisco and Venezuela, promotion stunts; all these have been instituted by him. How about gathering copy for this section of the class notes, Generoso? HARRY A. AUGENBLICK, JR., *General Secretary*, 67 South Munn Avenue, East Orange, N.J. JAMES W. CHURCH, *Assistant Secretary*, 2227 Avenue G, Council Bluffs, Iowa.

• 1948 •

Weddings of which we have received word are: May: Bill Machie to Virginia Hayward; June: Bill Wallace to Barbara Duggan, Ralph Evans to Gloria Fowler, Tom Buck to Lois Dean, Dick White to Mary Frengé, Richard Mankey to Mary Jean Cutts, Paul Cruckshank to Doris Booth, Richard Grisdale to Charlotte Jones, Gertrude Shuit, a co-ed, to George Burbank, Norman Stewart to Elizabeth Roberts, Vincent Lally to Marguerite

Tibert, Dick McCally to Sally Powell; July: Bud Garforth to Edna Ann Schott, Jim Leonard to Frances Perry, Roy Evans to Daune Lindsay, Arthur Davis to Elaine Craig; August: Walter Amadon to Jean Stearns.

Summer engagements include those of: Kenneth Drott to Florence McCarthy; Murray Rogers to Margaret McIntosh; Robert Mayne to Dorothy Mulvehill; John Rowen to Ann Bulger; Leon Groisser to Lila Horn; Cort Turner to Pris Reilly; Ben Ball to Helen Moss; John Howe to Georgia Regan; Duane Rodger to Patricia Dunham; and Adolf Monosson to Gloria Haskins.

One of the earliest questionnaires received was from Roy Evans who, after a six-weeks' training program under Professor Goodwin and others at Lake Placid, left old Yankeeland for a job in the Deep South. He has undertaken the teaching of work simplification in a North Georgia cotton mill and is utilizing his spare time recording on color film their "red dirt, green grass, and blue skies."—Several other men from the Class have also gone into textile work. Dick White is doing consulting engineering in a Georgia garment plant. Martin Billett, who received his M.S. degree from the Institute this fall, is doing textile research; as is Bob Fier, now learning the dyeing of textiles at the Hellwig Dyeing Corporation. Michael Kami is an ideas engineer (trouble shooter) for seven Allied Textile Printers' plants in Paterson, N.J. Kami, incidentally, is also designing ultramodern furniture and writing a book on "Industrial Engineering: Theory and Practice."

Norman Kee planned to go to Guatemala in October to help in the construction and initial operation of a steam electric station near Guatemala City and would appreciate word of any Alumni, '48 men particularly, who are in or around Guatemala. Norman's mailing address is in care of 11 Mott Street, New York 13, N.Y.—Leon Brettler is in charge of production planning and scheduling for the Metro Glass Container Company while brother Ben is at the M.I.T. Practice School at Oak Ridge, Tenn.

P. R. Marsilius is assistant sales manager and advertising manager of the Producto Machine Company, and Chester Vappi is control engineer in the construction of a new shopping center in Medford, Mass.—Robert R. Mott is spending the better part of his time in the advertising department of the Fafnir Bearing Company in preparation for a career in sales. Bob claims to be doing nothing more exciting than catching up on some long neglected reading and supporting a 1940 Plymouth. His address is 53 Forest Street, New Britain, Conn.

Another '48 man doing things of note is Fred Thorlin, a lieutenant colonel, who is now chief of tank and truck testing for the United States Army Ordnance Department. Detroit makes the pilot models; at Aberdeen, they are run through their paces; then Fred and his 300 civilians and 100 military personnel have to find

out why they break down, and recommend new design parts. Sounds extremely interesting. Bob Hanpeter, too, is engaged in automotive engineering and is at present in a training program at the Wagner Electric Corporation, manufacturers of motors, transformers and automobile brakes. Ken Brock sends word that whenever he can get away from his golf and tennis, he spends his spare time at the Workshop Associates, Inc., in Newton, Mass. Ken, who has already been sales manager for a small firm, is being groomed for commercial sales manager of this leading concern in the high-frequency antenna field. He also writes that Carl Boll, who still has another year at the Harvard Business School, spent his summer selling Fuller Brushes in San Francisco.—And speaking of class members who are still in school: Ed Powsner plans to spend the next four years at Yale Medical School; Hal Field, at Yale Law School, spent the summer substituting for vacationing theater managers and looking for lost golf balls—his and other persons; Adolf Monosson, at Harvard Business School; Sam Bowne, at Columbia; Jay Schwartz, at New York Law School; and John Weil and Jules Levin, after a year as physicists at the Brookhaven atomic energy plant, at Cornell.

Ed Kratovil is currently engaged in biochemical research on the production of specific drugs for Abbot Laboratories. In his "idle" hours Ed attends Northwestern University night school and National Guard meetings, travels and is "boning up" on radio.—Art Powell is associate mechanical engineer at the Industrial Research Laboratories in Baltimore, specializing in the development of electro-mechanical devices, and has recently completed a machine to inspect filled bottled beverages "such as beer and the like." Any other beer inspectors in the Class who would be interested in comparing notes with Art can contact him at Ruxton 4, Md. He would be particularly pleased to hear from any of the boys in his vicinity. The last letter received before sending this off to The Review is from Bob Loewy, senior vibrations analytical engineer with the Glenn L. Martin Company. Bob, when he is not checking flutter, shock mounting instruments, calculating dynamic loads, and so forth, is writing "pop" tunes "just for kicks."

Look for another long column from us next month and, in the meantime, if you haven't yet sent in your questionnaire, please try to do so soon.—WILLIAM R. ZIMMERMAN, *General Secretary*, in care of Kurt Salmon Associates, Inc., 3000 Albemarle Street, Washington, D.C. RICHARD H. HARRIS, *Assistant Secretary*, 24 Gifford Drive, Worcester, Mass.

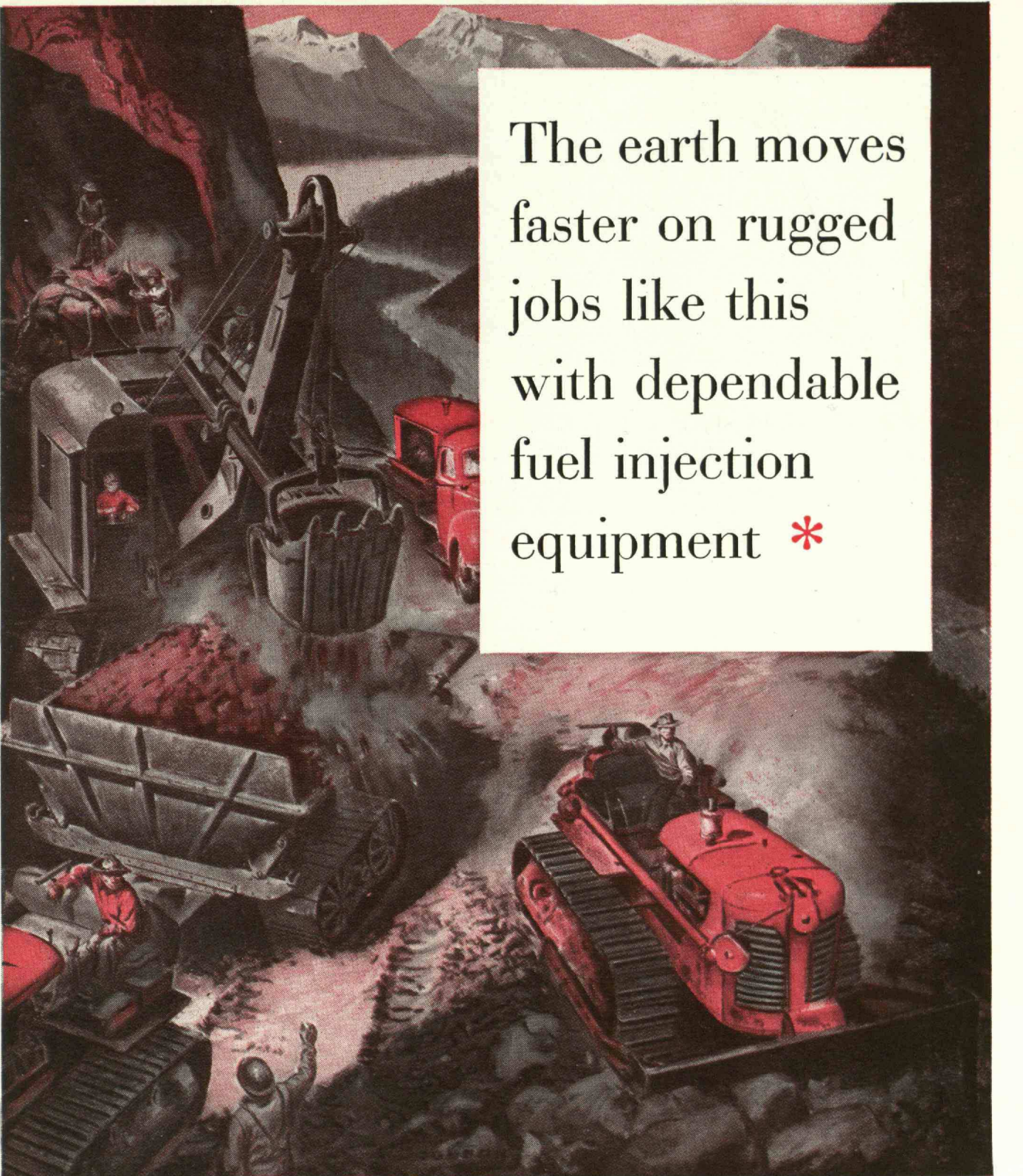
• 1949 •

Bertram Collins was one of 56 graduate students representing 20 countries who has been awarded a Rotary Foundation Fellowship for overseas study by Rotary International. Bert will attend Oxford for the 1949-1950 school year. Tom Hilton

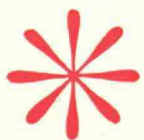
was appointed the new assistant to the Dean of Students and has a private office within the Dean's office. Tom and his wife have set up housekeeping in Westgate.

Our Class seems to have been possessed with a singular point of view during the summer. In total there were six engagements and 17 weddings. Engagements include: Theresa Uhrich to Clyde Adams. Clyde is at the Institute working for a master's degree. Charles Brekus to Priscilla Humphry of Boston. He is associated with the Prudential Insurance Company of America. Harold Keene to Patricia Parsons of Wollaston, Mass. Hal is with the American Thread Company in Fall River, Mass. J. Arthur Matey to Harriet Johnson of North Woodbury, Conn. He is with Prudential Life Insurance of Newark, N.J. Norman Surprenant to Mary Kirk of Greenwich, Conn. Garland S. Sydnor, Jr., to Joyce Hunnefeld of New York.

Marriages: Francis Bator to Micheline Martin on June 30 in New Orleans. Harald Bjerke to Dortha Nichols on July 20 in Bridgeport, Conn. John Saxe was best man and Bredo Behrens and Peter Hermanrud ushered. The couple will live in Oslo, Norway. Barron Brainerd to Julia Mullins on June 4 in South Dartmouth, N.H. James Cowdery to Harriet Callard on June 4 in West Newton, Mass. They will live in Cleveland. Thomas Hilton to Alice Robertson on June 18 in Orono, Maine. Art Van Stolk and Dave Yeomans were ushers. Dean Humphrey to Nancy Dean on June 25 in Sunderland, Vt. Denny C. Kalette to Sally Nielson on June 11 in Boston. David Klaiman to Anita Silverman on June 26 in Dorchester, Mass. They are living in Waterloo, Iowa. Andrews Lang to Nancy Simmerer on June 11 in Sudbury, Mass. They will live in Boston. Eric Howlett was best man. Peter Lehner to Mary Ostorn on July 23 in Hingham, Mass. William Howlett, Charles Jackson, Warren Houghton, and Davis Keniston '45 were ushers. Harold McInnes to Sally Kimball on July 2 in Bath, Maine. William Cassidy was best man and Jack Barriger, James Reid and Louis Peloubit were ushers. Thoms Moranian to Lillian Norian on July 10 in Watertown, Mass. James Ryder to Neria Kohl on July 2 in Jackson Heights, N.Y. Edward Thompson to Margaret Kessler on July 23 in Union City, N.J. They will reside in Beaumont, Texas. Maurice Vercoe to Margaret Batchelder on June 25 in Montpelier, Vt. He has a position with the General Electric Company in Lynn where they will reside. George Whipple to Hope Auchincloss on June 11 in New York. Euell Williams to Constance Wilkshire on June 11 in Cambridge. Malcolm Dick, John Redpath, Charles Currie, and Daniel Greenbaum were ushers. The couple will live in Newport News, Va. Elliot Woodward to Jean Chauncy on June 11 in Binghamton, N.Y.—So went the summer.—CHARLES W. HOLZWARTH, *General Secretary*, Morris C-36, Harvard Business School, Soldiers Field, Boston 63, Mass.



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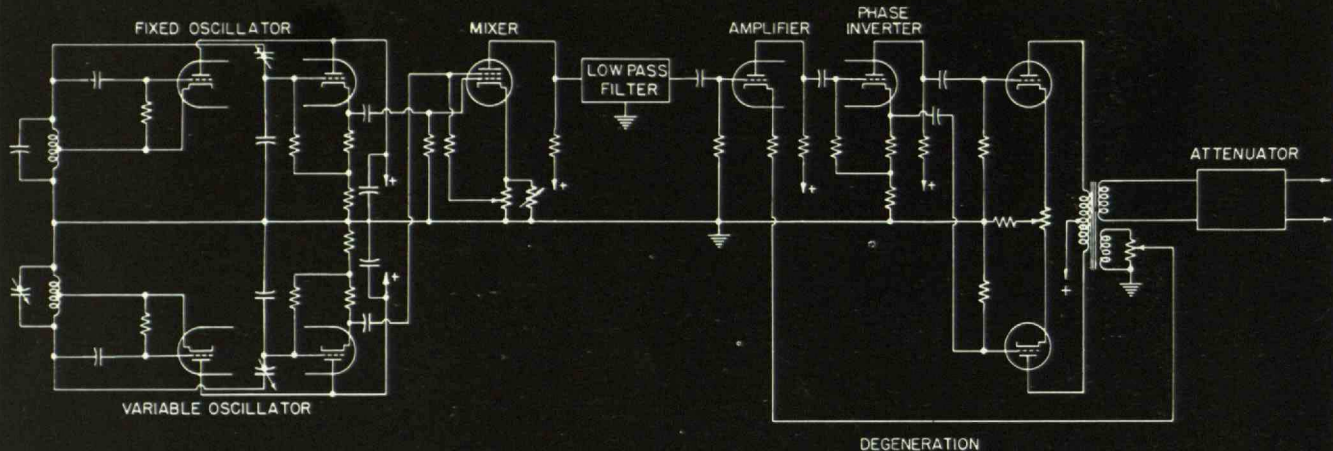


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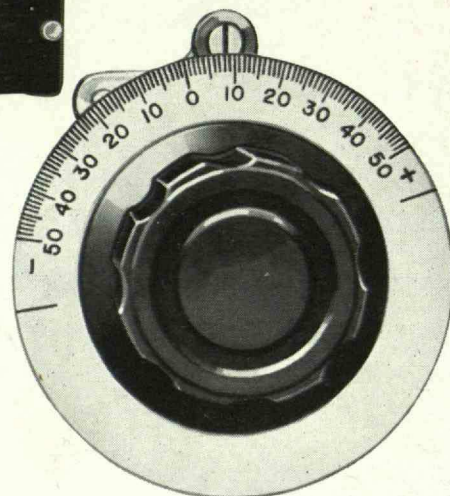
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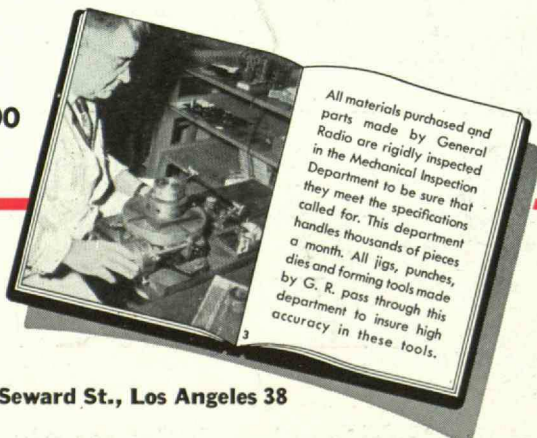


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